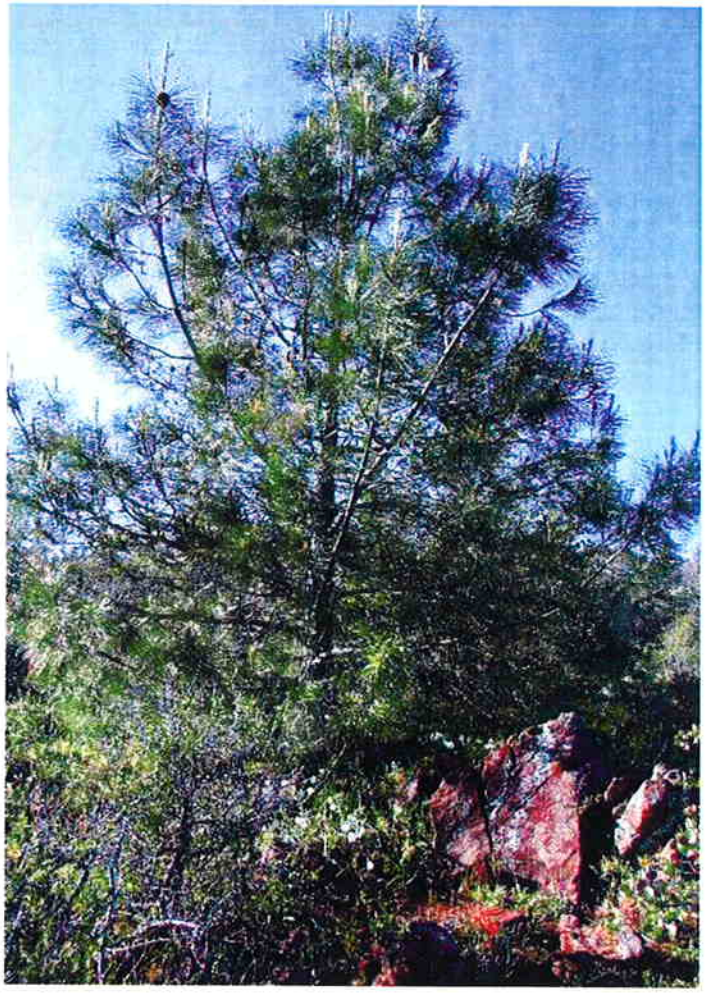
Pine Hill Preserve Management Plan



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I. INTRODUCTION

The Pine Hill Preserve (Preserve) was established in April 2001 to ensure that habitat for eight rare plant species, growing on gabbro soils at western El Dorado County (EDC), would be protected from factors threatening survival and recovery of the rare plants.

The gabbro is a unique soil formation in western EDC that supports chaparral, woodland and grassland habitat types. The soil, rolling topography, and Mediterranean climate in the area combine to sustain about 10% of the total California plant diversity.

In addition to plant species richness, several rare and endemic plant species exist in the habitat types of the gabbro soil formation. Five of the eight rare plant species protected at the Preserve are listed under the Federal Endangered Species Act and/or the California Endangered Species Act. Four of the eight rare plants are also endemic to gabbro soils in western EDC.

Habitat destruction and fragmentation due to housing and commercial development, and the alteration of favorable fire regimes in western EDC are the two main threats for the rare plants and their habitats. Currently, the Preserve provides protection and management for 4,042 acres of rare plant habitat, and 3,154 of these acres lie within a US Fish and Wildlife Service (FWS) 5,000-acre area designated for the recovery of the federally listed rare plants.

A Cooperative Management Agreement (Agreement) among nine local, State and federal agencies and one private organization enables the Preserve to work in coordination with the different partners to increase protection of rare plant habitat and to provide the best management alternatives to maintain the rare plant populations' viability.

Although this Management Plan (Plan) focuses on publicly owned lands within the Pine Hill Preserve boundaries, it may also serve as a guide for management of adjacent public and privately owned lands within the gabbro soil formation that can be set aside and/or

managed for rare plant conservation purposes. This Plan was reviewed by the different parties of the Agreement and a draft Environmental Assessment document for the Plan will be presented for public review during the Summer, 2007. After comments are received and addressed, the final Plan will be approved by all the parties of the Agreement, who will become signatory parties of this Plan.

Mission of the Pine Hill Preserve

The mission of the Preserve is to conserve in perpetuity the rare plant species and plant communities of the western EDC gabbro soil formation.

Purpose of this Management Plan

This Plan will coordinate management activities at the Preserve with actions undertaken by federal, State and local agencies, conservation organizations and private land owners to fulfill the mission of the Preserve. The Plan will also guide management activities at the Preserve and will serve as basis for future consultation with State and federal wildlife agencies to evaluate impacts of management on the rare plants.

This Plan describes physical and biological characteristics of the Preserve. It also identifies management challenges and funding needs, outlines implementation of management activities and proposes strategies designed to conserve the rare plants and their habitats. This Plan will be updated a minimum of every five years or more frequently, as needed, to allow for changes in management strategies as identified through monitoring and research projects and evaluation of implemented management activities.

Preserve Goals

1) Protect and manage gabbro soil rare plant habitat areas in western EDC to ensure their conservation and recovery.

2) Promote and conduct research to find the best management techniques to aid in the conservation and recovery of the gabbro soil rare plants.

3) Manage vegetation to maintain adequate fuel loads, provide functional habitat for the rare gabbro soil plant species, and reduce the risks of wildfire damage to human life and property in areas adjacent to the Preserve.

4) Provide the local community and public in general with recreational, educational and outreach opportunities concerning rare plants and their habitats.

5) Establish a consistent, long-term mechanism for funding management activities at the Preserve.

Management Objectives

A) Promote the protection of areas that will add to the Preserve system, with emphasis in areas where the rare plants are present, areas adjacent to the Preserve lands and areas that will facilitate habitat connectivity and management.

B) Conduct plant surveys to determine rare plant distribution and estimated population numbers to evaluate the degree of protection afforded to five federally listed plant species in relation to the FWS Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills recovery targets (USFWS 2002).

C) Conduct research and monitoring of the rare plants and their associated habitat to determine the best habitat conditions and management needs that will help achieve the Preserve mission.

D) Institute a fire/fuels and vegetation management program to promote the viability of the rare plant species at the Preserve, reduce the threat of wildfire, and increase the protection of properties and structures adjacent to the Preserve.

E) Communicate to the public the benefits and risks of fuels management and prescribed fire.

F) Accommodate and facilitate recreational, educational and outreach activities among public users, including guided and non-guided tours, teaching, interpretation, research implementation, volunteer coordination and other activities compatible with the Preserve mission.

G) Identify and quantify funding needs that will include management tasks, schedule of activities, designate responsible parties and determine sources of funding.

II. PROTECTED RARE PLANTS

The eight rare plant species targeted for protection at the Preserve are Stebbins' morning-glory (*Calystegia stebbinsii*) (Figure 1), Pine Hill ceanothus (*Ceanothus roderickii*) (Figure 2), El Dorado bedstraw (*Galium californicum* ssp. *sierrae*) (Figure 3), Pine Hill flannelbush (*Fremontodendron californicum* ssp. *decumbens*, previously *F. decumbens*) (Figure 4) Layne's butterweed (*Packera layneae,* previously *Senecio layneae*) (Figure 5), Red Hills soaproot (*Chlorogalum grandiflorum*) (Figure 6), Bisbee Peak rush-rose (*Helianthemum suffrutescens*) (Figure7) and El Dorado mule-ears (*Wyethia reticulata)* (Figure 8). Naming conventions follow Jepson Flora Project: Index to California Plant Names (Rosatti 2006).

Figure 1. Stebbins' morning glory.

Figure 2. Pine Hill ceanothus.
Photos by Graciela Hinshaw.

Figure 3. Pine Hill flannelbush.

Figure 4. El Dorado bedstraw.

Photos by Al Franklin.

Figure 5. Layne's butterweed. Photo by Al Franklin.

Figure 6. Red Hill soaproot. Photo by George W. Hartwell.

Fig. 7. Bisbee Peak rush-rose. Photo by George W. Hartwell.

Figure 8. El Dorado mule-ears. Photo by Graciela Hinshaw.

Rare Plant Status and Endemism

Five of the eight rare plants, Stebbins' morning-glory, Pine Hill ceanothus, El Dorado bedstraw, Pine Hill flannelbush and Layne's butterweed are protected by federal and/or State laws (Table 1). Red Hills soaproot and Bisbee Peak rush-rose are listed as rare by the California Native Plant Society (CNPS) and El Dorado mule-ears is considered by the BLM as a species of concern (Table 1).

Pine Hill ceanothus, El Dorado bedstraw, Pine Hill flannelbush and El Dorado mule-ears are endemic to the Pine Hill area, and are not known to exist under natural conditions anywhere else.

Table I. Rare plant species at the Pine Hill Preserve and their status.

Species	Federal and State Status	CNPS Status
Stebbins' morning-glory	Endangered (federal and State)	1B.1 Rare, threatened or endangered in California and elsewhere. Seriously endangered in California (CNPS 2007).
Pine Hill ceanothus	Endangered (federal) and rare (State)	1B.2 (Rare, threatened or endangered in California and elsewhere. Fairly endangered in California.)
El Dorado bedstraw	Endangered (federal) and rare (State)	1B.2
Pine Hill flannelbush	Endangered (federal) and rare (State)	1B.2
Layne's butterweed	Threatened (federal) and rare (State)	1B.2
Red Hills soaproot	Species of Concern (Bureau of Land Management)	1B.2
Bisbee Peak rush-rose	None	3.2 Plants about which we need more information-Review list. Fairly endangered in California.
El Dorado mule-ears	Species of Concern (Bureau of Land Management)	1B.2

Existing Laws and Conservation Programs

Protection for the eight rare plant species at the Preserve is aided by the status provided by the federal and state laws and regulations, by the CNPS listing, and by EDC General Plan adopted policies.

Protection of plants listed under the California Endangered Species Act (CESA) (Fish and Game Code Sections 2050 to 2097) is provided through habitat acquisition, review of local land use planning for projects that may impact the species, multi-species conservation planning, stewardship, recovery, research and education (CNPS 2001). Protection of plants that are state listed as "rare" is provided under the California Native Plant Protection Act of 1977 (NPPA) (Fish and Game Code Sections 1900-1913) which directs DFG to "preserve, protect and enhance rare and endangered plants in this State."

Protection of plants listed under the federal Endangered Species Act (ESA) (USFWS 1976) is provided by land acquisition, recovery plans, agreements with State agencies, consultation with federal agencies, prohibiting damage of such species in federal lands, and by Habitat Conservation Planning processes (CNPS 2001).

The Bureau of Land Management (BLM) protects special status plants by providing inventories, designation of Areas of Critical Environmental Concern (ACEC), monitoring, research, public education, land acquisition and volunteer assistance (CNPS 2001).

Plants that are listed as rare by the California Native Plant Society (CNPS) are fully considered during preparation of environmental documents relating to the California Environmental Quality Act (CNPS 2001).

The EDC's 2004 General Plan includes a Conservation and open Space Element to address the conservation of biological resources. Goal 7.4: Wildlife and Vegetation Resources of the General Plan is to identify, conserve, manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value. Policy 7.4.1.1 of EDC's 2004 General Plan establishes that "The County shall continue to provide for the permanent protection of the eight sensitive plant species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves consistent with County Code Chapter 17.71 and the

USFWS's Gabbro Soil Plants for the Central Sierra Nevada Foothills Recovery Plan". In addition, policies 7.4.1.2 through 7.4.1.6 of the General Plan directly address conservation issues regarding the rare plants, including purchase of lands for preserve sites, limit land uses within established preserve areas, a designation of an Ecological Preserve, preparation of preservation/conservation strategies when discretionary development is proposed, and avoiding disturbance or fragmentation of important habitats when possible (EDC 2004).

III. PRESERVE BACKGROUND

Historically, gold rush activities in the Pine Hill area and, more recently, commercial and residential development, have reduced and fragmented habitat for the rare plants growing on gabbro soils in western EDC (Barnes 2001 and USFWS 2002). Beginning in late fall of 1997, the California native Plant Society (CNPS) coordinate with other groups to encourage the State of California to preserve significant natural areas and, in 1979 the 240-acre Pine Hill Ecological Preserve was established (USFWS 2002). This State-owned Ecological Preserve is currently part of the Pine Hill Preserve system.

Between 1979 and 1982, five of the eight species targeted for conservation at the Preserve were listed as rare or endangered by the State under the Native Plant Protection Act of 1977. In 1987, CNPS raised concerns to the California Department of Fish and Game (CDFG) about the lack of botanical surveys being performed prior to development of areas in western El Dorado County. In 1989 the County and the development community became aware of the CDFG strong concern regarding this issue, and there was an agreement among all parties to seek for a regional solution to accommodate for development projects and off-site mitigation for the rare plants (BLM 2002)

In 1991 a study of potential rare plant preserve locations was conducted and published by EIP Associates with financing from development interests and EDC. The report addressed the lack of botanical surveys being performed prior to development in western EDC (EDC 2007). This document set the basis for future land acquisitions guided towards the establishment of a rare plant Preserve system (EIP 1991).

In 1992, a Memorandum of Understanding among CDFG, the BLM and the Bureau of Reclamation (BOR) recognized the importance of preserving habitat for the gabbro soil species. The EDC Board of Supervisors formed the Rare Plant Advisory Committee (RPAC) with business, non-profit, State and federal agency participation to advise the County on rare plant policy. Because of the increasing demand for housing, commercial and industrial development in western EDC, and the associated loss of populations of rare

plant species and the habitats with which they are associated, the RPAC was also assigned to identify feasible rare plant preserve sites, and funding mechanisms and management strategies for these preserve sites. The RPAC determined that the establishment of an approximately 3,450-acre preserve system was necessary for the recovery and ongoing protection of the rare plants, particularly in the Salmon Falls, Pine Hill, Cameron Park/Shingle Springs, as core preserve sites, and Martel Creek and Penny Lane areas, as satellite preserve sites. Mechanisms identified to acquire lands at the core preserve sites included density transfers, sales or donation of easements by willing partners and purchase of lands (USFWS 2002).

In February 1993 the recommendations of the RPTAC were presented to the EDC Board of Supervisors (BOS) (EDC 2007). In March of 1993 the BOS approved, in concept, four of the preserve sites and directed that the Salmon Falls, Martell Creek, Pine Hill and Penny Lane preserve units be included in the General Plan update. The Board did not approve the Cameron Park southern preserve site at that time because of cost (BLM 2002). Also, the Board of Supervisors deferred to an unspecified date the consideration of local financing options for funding the acquisition or maintenance of the four preserve units they did conceptually approve (EDC 2007).

On Februrary 27, 1995, the USFWS biological opinion with the Bureau of Reclamation (BOR) on the interim renewal of water contracts, including El Dorado County, identified as "critical needs" the implementation of a preserve system for the five federally listed plants and the endowment of the preserve sites with sufficient funding to maintain and operate the preserve system (USFWS, 1995).

On January 23, 1996 the EDC BOS approved RPAC recommendations, except for the preserve site at Cameron Park, and adopted Resolution No. 10-96 thereby approving the El Dorado County General Plan, including Policy 7.4.1.1 recognizing four ecological preserve units of the Pine Hill Ecological Preserve and establishing implementation strategies in accordance with El Dorado County General Plan, Volume II, Background

Information, Appendix I, Rare Plant Preserve Program. The rare plant preserve sites are designated by the EP overlay shown on the land use map and defined by Policy 2.2.2 4.

During 1997, letters from the FWS and CDFG where sent to EDC, to support the establishment, financing and management in perpetuity of the five preserve sites (including the Cameron Park unit) and covering 3,450 acres in western EDC. On March 24, 1998 the BOS approved a general Plan amendment to include the Cameron Park unit, and adopted Ordinance 4500 and In-Lieu Fee resolution (EDC 2007).

During 2001, a Cooperative Management Agreement was approved by three federal and two State agencies, one county government, one county agency, and a local non-profit conservation group to pool their resources to conserve the eight rare plant species and the systems they inhabit (see Cooperative Management Agreement section below).

In 2002, the FWS published a recovery plan recommending the protection of 5,000 acres of habitat for the rare plants growing on gabbro soil. The FWS recovery plan recommendation guides the recovery and conservation goals for the rare plants and compiles the best scientific knowledge to halt their extinction. An ultimate goal of the FWS recovery plans is to remove species from the endangered and threatened species list, once recovery goals are accomplished.

The 2004 EDC General Plan provides for the conservation and protection of soils, minerals, water, wildlife and fisheries, vegetation, cultural resources, and open space, and includes protection for the eight sensitive rare plants of western EDC. On July 19, 2004, the EDC BOS adopted Resolution No. 235-2004 thereby approving the 2004 General Plan including the five-unit ecological preserve and Policy 7.4.1.1 which states:

> The County shall continue to provide for the permanent protection of eight sensitive plan species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves consistent with County

Code Chapter 17.71 and the USFWS's *Gabbro Soils Plants for the Central Sierra Nevada Foothills Recovery Plan (USFWS 2002).*

Cooperative Management Agreement

Cooperation among agencies and organizations concerned with protection of the rare plants was formalized on March 1, 2001 with the signing of a Cooperative Management Agreement (Agreement) (Appendix 1). Eight local, State and federal agencies, including BLM, BOR, FWS, CDFG, California Department of Forestry (CDF), EDC, El Dorado Irrigation District (EDID) and the private non-profit American River Conservancy (ARC), were participants in the 2001 Agreement. El Dorado County Water Agency (EDCWA) also participated in rare plant conservation issues and supported land acquisitions with funding and, in 2005, the Agreement was amended to include EDCWA as the ninth official party. On July 18, 2006, after reaching its 5-year term, the Agreement was ratified by the different Cooperative Management parties. This new Agreement will be in effect until July 2011.

The Cooperative Management group is a committee formed by representatives of all the Agreement parties. This group meets quarterly (or sooner if needed) to coordinate management activities and address issues such as rare plant habitat protection, land acquisitions and funding mechanisms for the Preserve. The development of this Plan is among the common responsibilities of the different Agreement parties. Other responsibilities for the parties are listed in the Agreement document and summarized in Table II.

This Plan will further assist the Preserve Manager and the Cooperative Management group by providing guidance for rare plant and habitat conservation activities at the Preserve. The Plan is written to allow for flexibility in response to the accumulation of new information, reviews and updates of the Plan. Once approved by the parties to the Agreement, the Plan will be formally reviewed and updated every five years.

Table II. Pine Hill Preserve Cooperative Management Agreement.

Agency/organization	Responsibilities
ARC	Acquires land and provides fund-raising expertise, volunteer support and educational activities.
BLM	Conducts management planning, fuels management and research; grants special management designation to BLM lands in the Preserve; and aids in recovery of federally listed plant species.
BOR	Contributes to land acquisition, management and research.
CDF	Conducts management planning and fuels management.
CDFG	Oversees and manages activities on CDFG lands; provides consultation guidance regarding compliance with the California Endangered Species Act.
EDC	Maintains an Ecological Preserve designation to enforce development standards for areas with the rare plants. Participates in funding land acquisition and management of the Preserve. Provides technical support.
EDCWA	Offers support in the protection, care and management of the Preserve.
EDID	Provides access to the Preserve through easements adjacent to Preserve lands. Participates in funding land acquisition and management of the Preserve. Provides technical support.
FWS	Provides technical advice. Provides funding for land acquisition, research and management.

History of Land Acquisitions

In 1979, under recommendation from the CNPS, the California Department of Forestry (CDF) transferred 320 acres of not needed land at Pine Hill to the California Department of Fish and Game (CDFG) for ecosystem management (Howard 1979).

During the 1990's and into the current decade, funds from the County, State and federal agencies have been dedicated to the common goal of acquiring properties (fee simple) for the Preserve system. Often one or more agencies provide the funding, the ARC acquires the land and transfers the title to an agency, and the Pine Hill Preserve accepts primary management responsibility.

Between 1990 and 1996, the State acquired 305 acres that helped establish the Salmon Falls unit. In 1991 the BLM dedicated 1,305 acres of public lands to this unit and, between 2002 and 2003, the BLM purchased 1,029 additional acres for the unit. In 2003, the EDC also purchased and added 20 acres to the Salmon Falls unit. In 2006, another 40 acres were added to the Salmon Falls unit. This unit currently totals 2,699 acres.

In 1991, the BLM dedicated 320 and 166 acres of public lands to the Preserve system, and created the Martel Creek and Penny Lane units, respectively.

In 1991, the BLM also added 40 acres of public lands to the 320 acres owned by the State at Pine Hill to create the Pine Hill unit. Two later acquisitions by EDC and the BLM in 2002 and 2004, added 43 more acres to the now 403-acre Pine Hill unit.

Between 1997 and 2002, several acquisitions were conducted by ARC in the Cameron Park area, using County, State and federal funds. These acquisitions, totaling 392 acres, created the Cameron Park unit of the Preserve.

During 2005 and 2007, two different efforts to acquire 120 acres and expand the Preserve system were initiated by ARC. One of the acquisitions, consisting of two 20-acre parcels adjacent to the Salmon Falls unit, was funded by State and federal funds. The second acquisition process, using State and federal funding, is almost complete and includes two 40-acre parcels adjacent to the Martel Creek unit. In addition, the Preserve is in the process of obtaining 5.9 acres adjacent to the Cameron Park unit, as part of the mitigation requirements assigned to a development project.

The land acquisition process has become more difficult due to the few remaining large parcels with suitable habitat and the elevated cost of land in the area, especially near the Cameron Park unit, where some of the best habitat for the rare plants still exists. The acreage by owner in each of the Preserve units is summarized in Table II.

Table III. Pine Hill Preserve total acreage by ownership and unit.

Owner	Unit	Acreage
BLM	Cameron Park	392
	Martel Creek	320
	Penny Lane	166
	Pine Hill	60
	Salmon Falls	2,346
BOR	Salmon Falls	29
State of California	Pine Hills	320
	Salmon Falls	305
EDC	Cameron Park	63
	Pine Hill	22
	Salmon Falls	19
	Total	**4,042**

IV. SITE DESCRIPTION

Preserve Location and Physical Characteristics

The 4,042-acre Preserve is located in the central Sierra foothills in western EDC, north of Highway 50 and southeast of Folsom Lake (Figure 9), approximately 30 miles east of Sacramento. Elevations at the Preserve range from 480 to 2,059 feet above sea level.

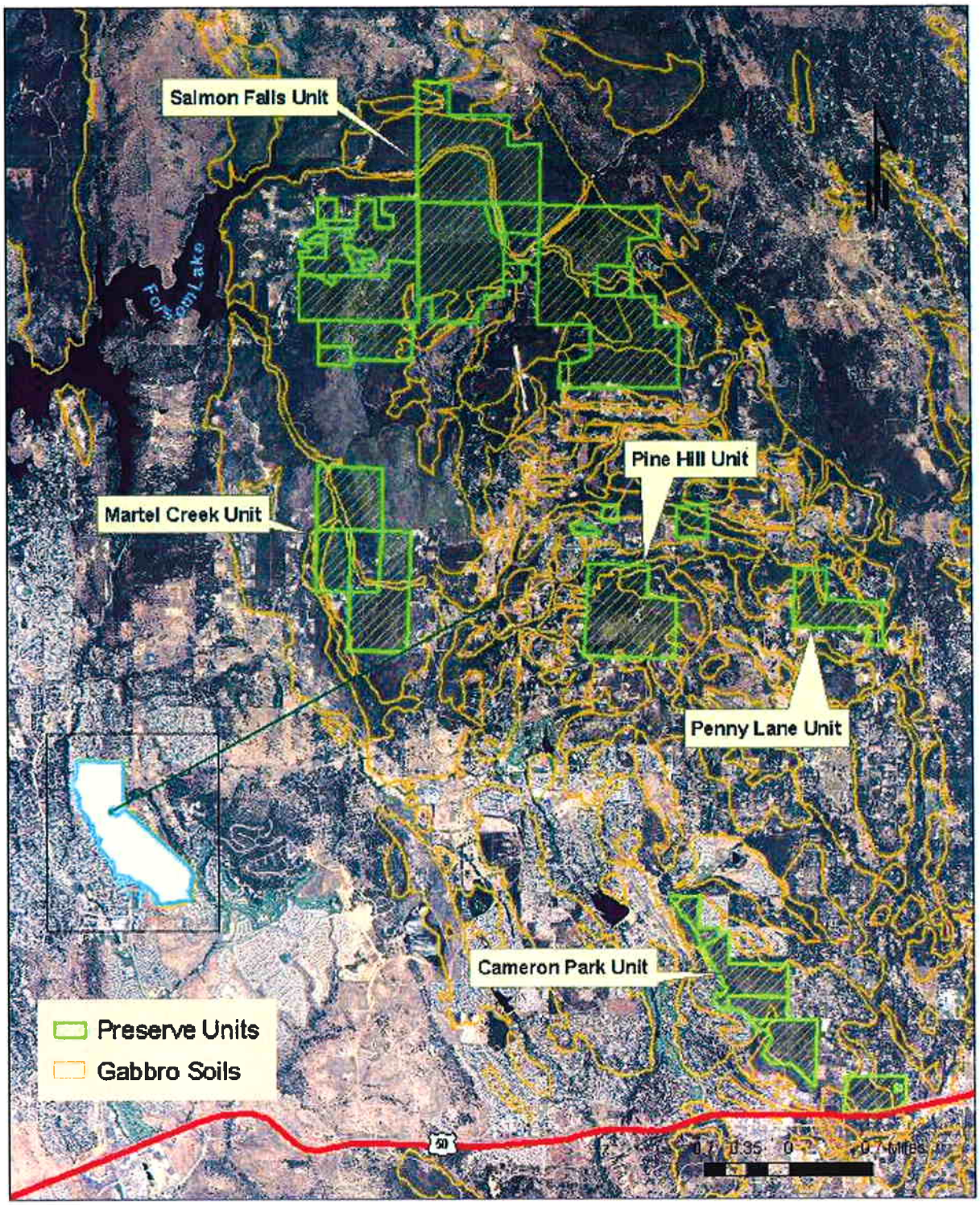
The Preserve is formed by five non-contiguous units that stretch over a 30,000-acre area of the gabbro soil formation (Figure 9). The gabbro soil formation dates from 175 million years ago during the late Jurassic Period (CDFG 1999). The dominant soils at the Preserve are classified as sandy loams of the Rescue Soil Series. These soils are well drained, with a high iron and magnesium content and a characteristic red color.

The climate is characterized as Mediterranean with cool wet winters and hot dry summers. Average precipitation and temperature during the last five years are 31 inches per year and 63° F, respectively (Weather Station History 2007); the average minimum and maximum temperatures during the past five are 29° F and 113° F.

A portion of the South Fork American River runs through the Preserve and several intermittent and perennial creeks in the Preserve (Sweetwater, Martel and Weber Creeks) flow into the South Fork American River.

Preserve Units

1) Cameron Park - This 454-acre unit is comprised of a 364-acre parcel and a 90-acre parcel in the Cameron Park and Shingle Springs areas, respectively. The largest parcel at Cameron Park is bisected in its northern portion by Meder Road. Both parcels are mostly surrounded by housing and commercial development, although a few privately owned parcels with natural habitat and significant rare plant populations remain undeveloped and help to naturally connect both unit parcels. Proposed development projects on



Figue 9. Pine Hill Preserve location map and Preserve

privately owned lands may impact the remaining habitat between the Cameron Park and the Shingle Springs parcels and may also continue to impact habitat all around the Preserve parcels. There is a utility right-of-way (ROW) easement associated with this unit.

2) Martel Creek - This is a 320-acre unit located in the Sweetwater Creek and Martel Creek areas. The unit is comprised of two 160-acre parcels that surround 80 acres of private land. The 80 acres of privately owned, undeveloped land provide connectivity in the unit. Additional habitat and low density housing surround this unit. The Martel Creek unit is about to be expanded towards the east by the ongoing acquisition of 80 acres of adjacent natural habitat.

3) Penny Lane - This is a contiguous 166-acre area north of the town of Rescue and near Penny Lane road. This unit is surrounded by low density development (houses with several-acre parcels). Some natural habitat remains in the privately owned parcels, either as a result of parcels not being developed or because landowners have maintained some of the original landscape and vegetation on developed parcels. There is a utility ROW associated to this unit.

4) Pine Hill - This is a 403-acre unit comprised of a 360-acre parcel at Pine Hill and smaller disjunct parcels nearby. This unit is surrounded by housing developments. House parcels in this area tend to be larger (5-10 acres) allowing for some of the natural habitat and the rare plant species to survive on privately owned parcels. Several undeveloped parcels with habitat remain in the Pine Hill area, but development continues to be a main source of habitat destruction and fragmentation in this area. There are utility and communication ROWs in this unit and associated facilities at the top of Pine Hill. CDF also maintains a watch tower and associated infrastructure at the top of the Hill.

5) Salmon Falls - This is a mostly contiguous 2,699-acre unit located in the Salmon Falls/Webber Creek area. The area surrounding this unit is mostly undeveloped and areas of remaining privately owned natural habitat currently connect the Salmon Falls unit to the Martel Creek unit. Two mining claims are associated with this unit.

Vegetation Ttypes

Vegetation at the Pine Hill area is represented by three distinct types: grassland, woodland and chaparral (Figure 10) (FWS 2002). The majority of the Preserve is covered with chaparral species. More than 700 plant species (approximately 10 percent of the native species in California) are represented in the gabbro soils formation and adjacent areas (Horenstein and Ehrgott 1977). Wilson (1986) described the Pine Hill area as having the highest concentration of rare and endangered plants in EDC. This high concentration is represented in areas set aside for conservation purposes at the Preserve and the surrounding remaining pockets of natural habitat.

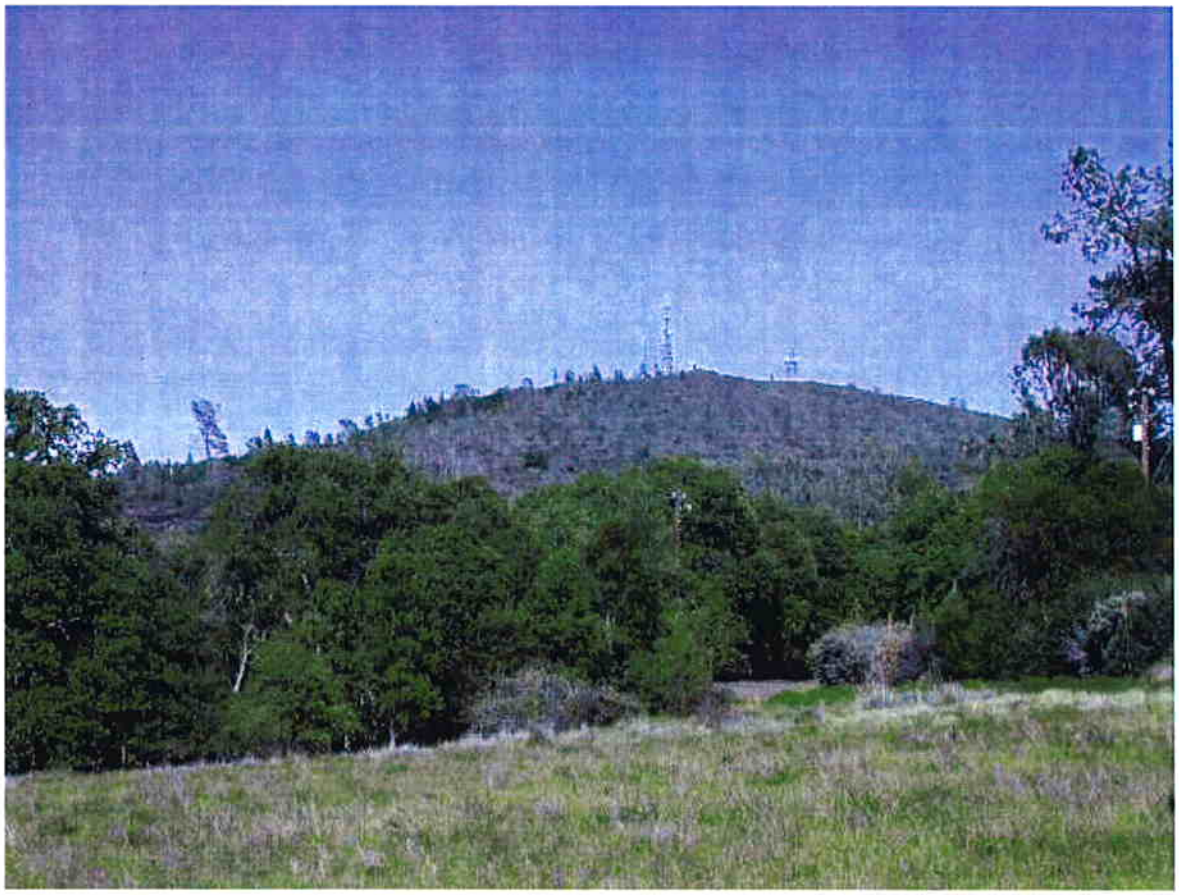


Figure 10. View of Pine Hill, showing grassland, oak woodland and chaparral habitat types. Photo by Al Franklin.

1) Northern Mixed Chaparral. The main vegetation type at the Preserve was described by Holland (1986) as gabbroic northern mixed chaparral. Primary species included in this vegetation type are chamise (*Adenostoma fasiculatum*), white leaf Manzanita (*Arctostaphylos viscida*), toyon (*Heteromeles arbutifolia*), California redbud (*Cercis occidentalis*), poison oak (*Toxicodendron diversiloba*), different species of ceanothus (*Ceanothus* spp), and California buckthorn (*Rhamnus californica*). All eight rare plant species targeted for protection at the Preserve are associated with gabbro and serpentine derived soils (USFWS 2002) and are present on the chaparral habitat type (Table IV).

2) Woodland. The woodland vegetation type is represented by grey pine (*Pinus sabiniana*), ponderosa pine (*P. ponderosa*), interior live oak (*Quercus wislizenii*), blue oak (*Q. douglasii*) and California black oak (*Q. kelloggii*) in combination with the chaparral species. Although El Dorado bedstraw is found in chaparral areas, it is mostly present in woodland areas. Other rare plant species, such as Pine Hill flannelbush, Layne's butterweed, El Dorado mule-ears, Red Hills soaproot and Bisbee Peak rush-rose are also found in woodland areas (Table IV).

3) Grassland. Grassland areas are mostly represented by non-native grasses such as brome (*Bromus* spp.) and little quaking grass (*Briza minor*), although some native species such as purple needlegrass (*Nasella pulchra*), bluegrass (*Poa bulbosa*) and blue wild rye (*Elymus glaucus*) are also present. Grassland patches occur in openings within the chaparral and woodland vegetation types, and as understory and interstices within the chaparral species. The rare plants are not common in the grasslands but Layne's butterweed, El Dorado mule-ears, Red Hills soap root and Pine Hill ceanothus have been observed in the chaparral/grassland transition areas or growing within patches of grassland (Table IV).

Rare Plants Description and Distribution

1) Stebbins' morning-glory is a perennial herb, about 40 cm tall, producing white flowers from May through July. This species requires pollination by bees and other insect

Table III. Distribution of rare plants at the Pine Hill Preserve by habitat type.

Species	Habitat types	Preserve Unit
Stebbins' morning-glory	Chaparral	Cameron Park and Salmon Falls
Pine Hill ceanothus	Chaparral, chaparral/grassland transition	Cameron Park, Pine Hill and Salmon Falls
Pine Hill flannelbush	Chaparral, chaparral/woodland transition	Pine Hill
El Dorado bedstraw	Woodland, chaparral	Cameron Park, Pine Hill and Penny Lane
Layne's butterweed	Chaparral, woodland and grassland patches	Cameron Park, Martel Creek, Penny Lane, Pine Hill and Salmon Falls
El Dorado mule-ears	Chaparral, woodland and grassland patches	Cameron Park, Martel Creek, Penny Lane, Pine Hill and Salmon Falls
Red Hills soaproot	Chaparral, woodland and grassland patches	Cameron Park, Martel Creek, Penny Lane, Pine Hill and Salmon Falls
Bisbee Peak rush-rose	Chaparral, woodland and grassland patches	Cameron Park, Martel Creek, Pine Hill and Salmon Falls

species to successfully establish seed (Baad and Hanna 1987). The fruit is a capsule and frequently seeds can be observed once the capsule opens. The leaves have 7-9 deep, narrow lobes and the trailing or climbing branches can grow up to 1 m in length (FWS 2002). Stebbins' morning glory has a rootstock that sends out herbaceous rhizomes helping with propagation (Nosal 1977). This species seems to be shade intolerant and does not occur beneath closed canopy (Baad and Hanna 1987). At the Preserve, this species is present in chaparral areas of the Cameron Park and Salmon Falls units (Table IV). It also occurs in areas of Nevada County, with very restricted distribution.

2) Pine Hill ceanothus is a perennial, evergreen shrub that grows up to 3 m in diameter (Wilson 1996). The branches generally lie on the ground, and they can root if in contact with the soil. It has small white flowers that grow in clusters April through June. This

species requires pollination, mostly by flies, gnats, bees and wasps, for reproductive success (James 1996). The fruits are reddish-brown and when mature, they open in an explosive way that helps to spread the seeds. After a fire, Pine Hill ceanothus does not resprout and depends on re-establishment from seeds. Canopy shading of this species affects its flower and fruit reproduction (James 1996). This endemic species to the Pine Hill area is found in the Preserve chaparral areas at the Cameron Park, Pine Hill and Salmon Falls units. It is also found at some chaparral/grassland transition areas (Table IV).

3) Pine Hill flannelbush is a perennial shrub that grows up to 1.5 m tall. The leaves are covered with hairs and have 5 to 7 deep lobes. The flowers are orange and the blooming period is from April to July. Native solitary bees pollinate the flowers (Boyd 1994). The fruit is a capsule containing an average of 3-4 seeds (Boyd 1985). Seventy percent of the developing fruit is destroyed by insects prior to maturing, the seeds can be eaten by rodents and the seeds dispersed by harvest ants (Boyd 1996). This species is usually present on rocky ridges in chaparral and woodland communities (Hickman 1993). This endemic species has a very restricted distribution within the Preserve. It is only represented in the chaparral and woodland/chaparral transition habitats at the Pine Hill unit (Table IV).

4) El Dorado bedstraw is a small perennial herb, with hairy aboveground stems up to 30 cm in length that are sometimes connected underground (Hinshaw pers. obs. 2007). The small leaves are also hairy and are arranged in groups of four at each node. Flowers are pale yellow and the species blooms between May and July. The small fruit is covered with hairs (Hickman 1993). Very little is known about the biology or ecology of this species (CDFG 1992). This endemic species grows in the understory of live oak or black oak woodlands, often on north facing slopes (EIP 1991) although in the Preserve it is also found in the chaparral understory. This species is present at the Cameron Park, Pine Hill and Penny Lane units (Table IV).

5) Layne's butterweed is a perennial herb up to 60 cm tall that grows from a rootstock.

The larger leaves grow at the base of the plant and smaller leaves, along the stem. The flower heads are yellow and this species blooms from April to July (CNPS 2001). The predominant breeding system for this species is outcrossing pollination and the resulting dandelion-like seeds are likely dispersed by wind (Marsh 2000). This species is mostly found in open, rocky areas in chaparral and woodland habitats (EIP 1991) and in some grassland patches. Observations suggest that Layne's butterweed is an early succesional species that occupies temporary openings on gabbro or serpentine soils and is eliminated as vegetation grows up around it (Baad and Hanna 1987). It is distributed over all units at the Preserve (Table IV). It also occurs in the Red Hills in Tuolumne County and near Brownsville in Yuba County.

6) Red Hills soaproot is a perennial herb that grows from an underground bulb that is long and has several thin, reddish-brown outer coats. The plant has a rosette of long, narrow basal leaves with wavy margins, a thin, branching stem up to 30 cm tall and scattered whitish flowers. The flowers, which bloom in June, open in the evening and close by the next morning. The fruit is a rounded capsule divided into three chambers (FWS 2004). This species is present at all units of the Preserve and is typically found on rocky soils in open areas in chaparral (EIP 1991) although it is also present in woodlands and grasslands in the Preserve (Table IV). It also occurs in the Red Hills Area in Tuolumne County.

7) Bisbee Peak rush-rose is a broom-like perennial shrub up to 75 cm tall, with many straight, slender stems. The leaves are flat and approximately 2.5 cm long. The green leaves and stems are very densely covered with soft, white, short hairs. The yellow flowers have five broad petals and appear from April to August. This species is distributed on rocky areas over all the Preserve units and it is also distributed beyond the gabbro soil formation, into the Ione soil formation (EIP 1991) (Table IV). It also occurs in Amador and Calaveras counties.

8) El Dorado mule-ears is a perennial plant up to 1 m tall that spreads through underground rhizomes (Ayres 1997). It has large (20 cm long), ovate leaves with a broad

base. It has one to four yellow flower heads, with the appearance of a typical sunflower inflorescence (EIP 1991). This species is pollinated by native bees and the seeds are dispersed by water and wind, although recruitment by seeds is very poor (Ayres and Ryan 1977). El Dorado mule-ears is restricted to the Pine Hill area where it grows mostly in open areas on the gabbro soil formation. This endemic species of western EDC is present at all units of the Preserve, in chaparral, woodland and grassland areas (Table IV).

Other Wildlife Species in the Preserve Area

The Preserve's vegetation is not only rich in plant diversity (see Appendix 2 for a list of plant species of the Pine Hill unit and surrounding areas), but it also helps to support a diversity of wildlife in the area. Over 240 species of wildlife are known to occur within and near the Preserve (Appendix 3).

Wildlife observed at the Preserve area include coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), black-tailed deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), California ground squirrel (*Spermophilus beecheyi*), black bear (*Ursus americanus*), red-winged blackbird (*Agelaius phoeniceus*), Mallard duck (*Anas platyrhynchos*), western scrub-jay (*Aphelocoma californica*), great egret (*Ardea alba*), red-tailed hawk (*Buteo jamaicensis*), valley quail (*Callipepla californica*), western rattlesnake (*Crotalus viridis*), California whipsnake (*Masticophis lateralis*) and California horned lizard (*Phrynosoma coronatum*).

In addition, the Preserve supports numerous insects including the different pollinators required for rare plant reproduction. An undetermined number of fungi, soil bacteria, and algae also exist in protected areas within the Preserve. Because the mechanisms for the conservation of the rare plants depend upon the existence and functionality of the entire ecosystem, conservation and management efforts should also focus on preserving the soil, hydrology and adequate fire regimes to sustain all wildlife species.

Figure 11. California whipsnake, Salmon Falls unit. Photo by Graciela Hinshaw.

Cultural Resources

There is no clear pattern of historic land use in the gabbro soils area, although in general more settlement and ranching/farming activities were established in the relatively flat, oak woodlands compared to the chaparral-covered hills. A cursory review of land records on file at the BLM Folsom Field Office indicates that Preserve lands (which are mostly located on brushy hillsides) generally were transferred to private ownership later than the more open, low-lying oak woodlands.

The documentary record suggests decades of intensive mining in the area beginning during the Gold Rush. For decades, towns like Salmon Falls, Shingle Springs, and Rescue were significant service centers for local miners. As a consequence, placer and hardrock mining sites occur in the Preserve and adjacent areas. An example of a mining site is the hardrock Boulder Mine, located near Weber Creek. Other mining sites and features in the Preserve include the Niles Reinhold Placer Mine, a 1930s mining settlement near Weber Creek; an 1800s house site near Peacock Ravine; and the

Diamond Ditch/Park Canal, a mining and irrigation ditch that runs through the Cameron Park Unit (Barnes 2001).

V. MANAGEMENT ISSUES AND STRATEGIES

This section identifies main issues affecting the survival, conservation and recovery of the rare plants. It also describes the management strategies to approach these concerns. The strategies focus on ameliorating or eliminating threats to the survival, conservation and recovery of the rare plants.

Land Protection

The most common threat to all the species protected at the Preserve is the loss and/or fragmentation of their remaining natural habitat (FWS 2002). Most of the 30,000 acres of gabbro soil plant habitat has been lost to commercial, urban and suburban development. The establishment of the Pine Hill Preserve has helped to ensure protection for 4,002 acres of gabbro soil plant habitat, and 3,114 of these acres lie within the FWS 5,000-acre area designated for the recovery of the federally listed rare plants.

Because habitat destruction and fragmentation in western EDC continues at a rapid rate, the Preserve's main strategy focuses on identifying and setting priorities to protect rare plant habitat. Habitat and plant protection can be accomplished through acquisition and dedication of land for conservation purposes and/or implementation of other land protection mechanisms, such as the establishments of conservation easements.

The Preserve collaborates with the different partners to locate funds for land acquisition, through the application of grants, appropriation of federal funds, and local, State and federal mitigations funds sets aside to offset the effects of rare plant habitat destruction and alteration. The Preserve also works with private landowners willing to provide protection for the rare plants and their habitats by allowing surveys and monitoring projects to be conducted on their properties, and by providing areas for habitat connectivity (corridors and "stepping stones") that supports the dispersal of plants among habitat areas and facilitate genetic exchange among occurrences.

The proper identification of units is an important aspect of land protection at the Preserve. The strategic placement of posts, signs and fences will help identify Preserve boundaries, provide guidance to the public about appropriate uses, and consequently help to maintain the Preserve's ecological integrity.

Another important aspect of land protection at the Preserve is the prevention and remediation of incidents such as trespass, trash dumping and off road driving that may damage the rare plants directly or degrade their habitat. Regular patrolling visits to establish presence at the Preserve and communication with neighbors have proven to be effective strategies for habitat protection at the Preserve. Neighbors regularly report incidents to the Preserve manager thus helping to prevent trespass and habitat degradation incidents. The Preserve also works with BLM and local law enforcement to prevent, remediate and prosecute the most severe illegal trespass incidents.

Inappropriate Fire Regime

The second most important threat to rare plants at the Preserve is habitat degradation due to altered fire regime. Some of the rare plants at the Preserve have evolved with fire and require an adequate fire regime to germinate, successfully establish and/or reproduce (Ayres 1977, Boyd 1985). The historic fire regime, which was favorable to the rare plants, has been altered by fire suppression and subsequent fuel buildup or, conversely, by frequent fires that did not allow for recovery of the native vegetation. It seems that most of the rare plants at the Preserve benefit from some kind of disturbance to proliferate, such as removal of shrubs that compete with the rare plants for space, sun light and soil nutrients. For some species, fire also plays a role to periodically remove shrubs and promote germination of rare plant seeds. Without fire or other disturbance mechanisms that eliminate shrub competition, the rare plants populations tend to decline in number and distribution over time.

The excessive accumulation of fuel (from a combination of dense trees, shrubs and/or grasses, dead and alive) at some of the Preserve areas not only reduces rare plant habitat quality but also increases the chances of catastrophic fire events that may be detrimental

(due to excessive heat in the soil and vegetation layers) to rare plants, human life and property. Prescribed burning at the Preserve will restore appropriate fire regimes for the rare plants, aiding in their conservation and recovery. However, because Preserve boundaries interface with urban and suburban development, safety to human life and property are major considerations and constitute a tremendous challenge for effective management of fire related activities at the Preserve.

The Preserve strategies to restore fire, or use other mechanisms to reduce fuel loads include an evaluation of risks for habitat, human lives and property and the development of a Fire Plan. The risk evaluation focuses especially on the Cameron Park unit where most of the wildland-urban interface occurs (Hood, 2004). A draft Wildfire Community Protection Plan (WCPP) was prepared during by Murphy (2007) for the Cameron Park unit of the Pine Hill Preserve. These documents provide with information that can be used for a more general approach at the Preserve, once particular needs for each one of the Preserve units are considered.

An important strategy is continuing to implement fuels reduction projects, including the creation of fuel breaks to reduce the risk of catastrophic wildfire that may affect human lives, property and rare plant habitat. In the event of wildfire, completed fuels reduction projects will facilitate safe, effective fire suppression and may provide with a geographic approach for fire containment, while taking into consideration the biological values in the area.

In 2002, the Preserve started creating a fuel break around a large portion of the perimeter of the Cameron Park unit (next to the most densely human population area). Chaparral, cut with chainsaws, was hand-piled and burned under controlled conditions. Trees and herbs were left undisturbed, rare plants were marked, and crews were trained to recognize the rare plants and avoid them. When burning operations had to stop due to health concerns for one neighbor, the removal of the shrub layer along the fuel break continued using a shrub masticator. A vegetation chipper was also used on larger pieces of debris accumulated at the brush piles. This shrub removal seems to be beneficial for most of the

rare plants and rare plants have established in areas formerly occupied by the shrubs. Furthermore, recruitment of new individuals is evident in areas where the shrub piles were burned. Effects of brush removal on the rare plants are being evaluated by the BLM through monitoring programs for Stebbin's morning glory, Pine Hill ceanothus, El Dorado bedstraw and El Dorado mule ears.

Because positive responses to burning at long intervals does not imply that the species can survive repeated burning at short intervals, another strategy to restore adequate fire regimes for the rare plants at the Preserve is to conduct further research on the response of the rare plants to fire, to evaluate the regeneration of these species (e.g., the rate at which the seed bank is replenished), to learn about the range of fire frequencies the species tolerate and the range that optimizes regeneration.

Other strategies include continued cooperation between BLM, CDF, FWS and CDFG in obtaining funding for planning and implementation of prescribed burns and other fuel reduction activities. During 2006, FWS and BOR's Central Valley Project Conservation Project (CVPCP) and Habitat Restoration Project (HRP), identified fuels management at the Preserve as a priority. The Preserve successfully applied and funds to develop a fire management plan that will includes management alternatives to reduce fuel loads, to initiate the implementation of the plan, and to monitor and evaluate its effectiveness to enhance rare plant habitat. During 2007, a series of small fuels reduction projects have been implemented at the Cameron Park and Pine Hill units.

During 2006, the Preserve initiated participation with EDC Fire Safety Council to coordinate wild fire prevention activities and, during 2007, the Preserve has worked in coordination with the Cameron Park Fire Safety Council to participate in the development of the WCPP and to seek advice for the implementation of the fuels reduction projects at the Preserve.

Community education and outreach, and cooperation with the local Fire Safety Councils is a valuable strategy to successfully implement fuels load reduction at the Preserve. The

Preserve will continue to evaluate and opportunities and implement practices that will reduce the risk of wildfires that would result in catastrophic events for the rare plants and human communities. The Preserve will also continue to expand outreach and education to homeowners and communities about prevention of fires that may affect the Preserve.

Access

One of the main management concerns at the Preserve is the limited direct access to the different Preserve units for management purposes or for public use. Vehicle access is either extremely restricted or nonexistent. Foot access is possible although somewhat limited, and there are several points where private property (with permission) has to be crossed before reaching Preserve lands.

On one hand, limited access to the Preserve units helps maintain habitat integrity by preventing trespass issues. The Ponderosa 50 parcel of the Cameron Park unit is the only parcel of the Preserve that has open and regular access by vehicles, which favors illegal trash dumping. On the other hand restricted access prevents low impact, responsible public use and hinders patrolling and monitoring. In accessible areas, the Preserve receives considerable use by hikers, wildlife observers, and other visitors year-round. Furthermore, management activities in areas at the Preserve with available access are more easily scheduled and implemented.

At the Cameron Park unit there is no good access point at this time to provide parking and public access. Development of such an access point for education and interpretation is a priority because 1) this unit is located near to densely populated areas, 2) has a high diversity of native plant species, including seven of the eight rare plants, and 3) is a favorite place for guided plant tours and general public use, including hiking and wildlife watching activities.

The Salmon Falls Unit is the largest unit of the Preserve. Because of its extension and the contiguity of habitat surrounding this parcel, this unit has the most potential for hiking, wildlife observation and other low-impact recreation. For this reason the

development of a vehicle access point south of the South Fork American River is also a priority. This access point will provide parking and access to designated trails and routes in this area should be designed to prevent impacts to rare plants and taking into account adjacent land ownership boundaries. Public road access to the Salmon Falls Unit from Kanaka Valley Road may be possible, but this would require either further land acquisitions or securing an access easement and parking area to allow the public to visit the Salmon Falls Unit.

The State-owned land in the Pine Hill unit has a long history of use for interpretation, especially spring fieldtrips guided by CNPS, CDFG and the Preserve. Most public use is confined to the access road, and the summit of the hill. Access for the public involves walking up the paved road from the electronic gate at the base of the hill.

There is no public road access to the lands in the Martel Creek or Penny Lane units. Because these units lack a full complement of the rare species, their interpretive value is limited and they are not well suited for the development of trails for recreation.

Strategies to improve access to all Preserve units include identification and mapping of existing and potential access points, opening and maintaining trails and designating parking areas. The Preserve will also continue to coordinate with private landowners to gain increase/improved access across private lands to the Preserve and to target for acquisition of parcels that would improve access to the different Preserve units.

Roads and Trails. Some roads will remain available for various special purposes, such as easement and right-of-way access. Some roads may be retained for administrative or fire suppression purposes but will not be open for public use. Public use of vehicles on Preserve lands will be limited to roads leading to designated parking areas. Generally, the public will have vehicular access to the edge of the Preserve and to designated parking areas but travel the Preserve will be non-motorized. The 1872 General Mining Law provides for access over public lands to mining claims, but neither this Law or the BLM guarantee access to claims over private property.

Existing trails providing access within the different Preserve units will continue to be maintained and or restored. Trails that are not required for management or public non-impacting recreation will be restored to natural habitat by 1) closing the trails, 2) controlling erosion and weeds if needed, and 3) planting native plant species. Creation of new trails will be considered only if absolutely needed for management or public use and if the associated effects on the rare plants can be minimized or avoided.

Building new roads on Preserve lands that interfere with the Preserve's mission and with local, State and federal conservation goals for rare plant habitat protection will not be allowed. Therefore and according to long term management goals consistent with the BLM's 1983 Sierra Management Framework Plan and the 2007 Sierra Proposed Resource Management Plan there the building of new roads on Preserve lands is unlikely.

Road and trail use, development, maintenance and associated activities on federal lands are subject to the provisions of the ESA and, therefore, protection of the rare plants will be favored over activities that may be detrimental for these species or their habitat.

Parking Areas. There are no developed parking facilities in the Preserve; the few designated parking spots are on private property or along public roads, requiring a walk of up to a half mile or more to reach Preserve lands. As a consequence, visitors are encouraged instructed to carpool and park as few vehicles as possible at designated parking areas near the Cameron Park, Pine Hill and Salmon Falls units. In the Cameron Park area, one of the most visited units at the Preserve, parking along public roads and then crossing Meder Road to reach a trail is a safety concern.

Designation and development of parking areas in the Cameron Park and Salmon Falls units are discussed in the Management Tasks section of this Plan and funding for development of these parking areas is addressed in the economical analysis section of this Plan.

Preserve Public Uses

One of the Preserve goals is to provide the community with recreational and educational opportunities to promote the protection of rare plants and their habitat. Some of the main concerns and approaches regarding the use of Preserve lands by the public relate to:

Special Designation Areas. Section 1580 of the Fish and Game Code provides for the acquisition, designation, and management of property to protect threatened and endangered plants, animals and specialized habitat types as Ecological Reserves. Because CDFG has designated the State lands on portions of the Pine Hill and Salmon Falls units as the Pine Hill Ecological Reserve (PHER) and because access to this areas is through privately owned parcels and road, public access to these areas is restricted. In general, guided field trips and hiking are allowed, with previous notification to the CDFG and/or the Preserve Manager. The CDFG PHER sites within the Preserve are shown in Figure 12.

The BLM is also proposing that the Preserve be designated as an Area of Critical Environmental Concern (ACEC). If the Preserve is designated as an ACEC, the BLM will be required to protect its important natural resources (BLM, 2006a) and certain public restrictions will apply. Only BLM Preserve lands are included under this proposed ACEC designation. Activities that have potential to cause significant disturbance (i.e., large-scale mining, construction of roads, high-voltage transmission lines, telecommunication towers, etc.) may not be allowed or would require careful planning to avoid or to minimize resources impact. If there are conflicts between plant protection and public access, plant protection will be prioritized.

Off-road Vehicles. One road in the Salmon Falls unit, used primarily for recreation, has a long history off off-road vehicle (ORV) use. This road may remain open to the public as long as this use does not conflict with the protection of the rare plants, and moderate vehicle use may be allowed as long as it does not affect the plants negatively. Recent development on private property has blocked historical vehicle access to this part of the Salmon Falls unit for both public and management uses, although land owners allow access by foot through their properties for management purposes. A desirable strategy to

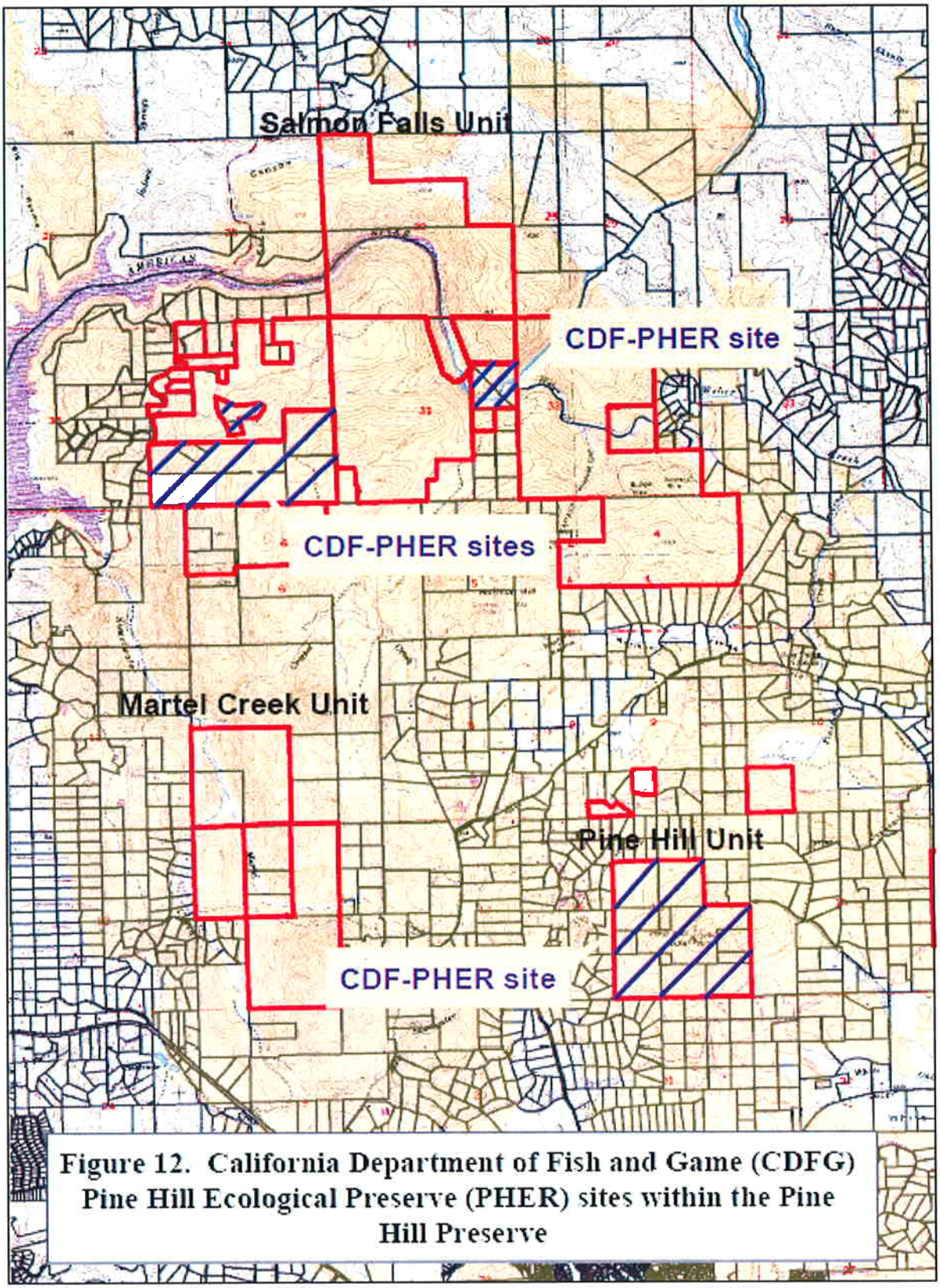


Figure 12. California Department of Fish and Game (CDFG) Pine Hill Ecological Preserve (PHER) sites within the Pine Hill Preserve

solve the access restriction in this part of the Preserve would be the acquisition of lands or easements that would allow for direct access to this part of the Preserve. No other roads in the Preserve have a similar history and use pattern or will remain open for vehicular recreation.

Equestrian and Mountain Bike Use. Little equestrian or mountain bike use occurs in the Preserve. Horses and mountain bikes cause more disturbance than human foot traffic to the surface of trails, especially when soils are wet. Horses also bring weed seed in their digestive tracts, hooves and coats. However, occasional use of trails may be authorized if impacts to sensitive resources can be minimized. Proposals for use of trails for equestrian or mountain bike use by organized groups will be considered on areas where impacts to listed plant populations can be avoided. Such proposals would need to include strategies and demonstrate the ability of users to address potential problems resulting from trail use, such as trail maintenance and weed control. The proposals would only be accepted on a provisional adaptive management basis, and would be regularly evaluated for impacts. Specific measurable thresholds of change detrimental to the rare plants and associated to the potential equestrian and bike use would be established. If those thresholds were reached or exceeded it would trigger either modification or cancellation of the use.

Day Use and Camping. Currently, there is little recreational camping on Preserve lands. The confluence of Weber Creek and the South Fork American River is the only area that receives regular recreational camping use. Boaters that camp along the river rarely camp within Preserve lands.

Holders of recreational dredging permits along the South Fork American River, at the Salmon Falls unit, are currently allowed to cold camp, or camp on sand or gravel bars where there is no continuity of fuels to the canyon slope. The BLM has discretion to whether or not to authorize these permits and suction dredging on mining claims may only occur under approved Plans of Operations.

Only the Salmon Falls unit is large enough to be suitable for camping, such as at the confluence of the South Fork and Weber Creek, where ORV users camp. There is a history of conflict between the recreationists who drive their (mostly) four-wheel-drive vehicles to the river from Jurgens Road and local residents. Many of the difficulties result from activities occurring at night. Residents have reported drunkenness, shooting, bonfires, driving of vehicles across private property, and damage to private property. Residents are particularly concerned about the possibility of an escaped campfire or bonfire running from the bottom of the canyon up to their homes above. Changing the area to a day use area with appropriate enforcement will help alleviate these problems. Enforcement will occur in cooperation with BLM rangers and the EDC Sheriff's Department.

If allowed, overnight camping may impact the natural resources and increase the cost of monitoring and managing for such use. For example, fire hazard due to campfires would increase as would law enforcement needs requiring night patrols, and involving potential problematic behavior by campers using alcohol and lighting unsafe campfires.

Environmental degradation like crushing, cutting vegetation, petroleum spills into the river, driving in riparian zones, poor sanitation, etc., have also occurred in association with camping and ORV use at night. Campfires are generally used in the evening or morning in the context of camping. No destructive wildfires have occurred as the result of camping at the confluence, but the potential exists. There are no toilet facilities along this stretch of the river and this causes sanitation problems, magnified in importance by the proximity to the river. Although these kinds of activities that result in environmental damage have happened during the day as well as at night, drug/alcohol use, insufficient law enforcement, the impetus for fires and longer visitor stays all tend to increase the likelihood of environmentally damaging activities when people stay overnight.

During 2005 through 2007 the Preserve has taken care of illegal camp sites, and the associated cleaning of trash sites, at the Cameron Park unit. This year cleaning of three sites at the Cameron Park unit was especially critical because of the use of camping

stoves and fire pits by the trespassers. The remediation of reported illegal camping incidents and the periodic patrolling and protection of the different Preserve units to prevent such incidents continues to be strategic to address this management issue.

Boating Access. The South Fork American River is the only available boating water in the Preserve. It is a major whitewater rafting stream with high levels of both commercial use and private use. Folsom Lake extends up the South Fork American into the Preserve, especially when the lake is at high water. Boaters, when they leave the water, tend to stay close to the water, mostly in the riparian zone. None of the plant species or communities to which the Preserve is dedicated are riparian. Further, most terrestrial activity of rafters occurs at designated stopping points, none of which are in the Preserve.

Extension of Existing Public Roads/Highway Projects

The Preserve contributes to the wealth and health of the western EDC inhabitants, and the public in general, by protecting natural resources and providing opportunities for recreation and education. Most of the adjacent landowners are pleased to have preserved lands next to their property, enjoying the natural views and recognizing that their property value and life quality increase as a result of the Preserve's open space, cleaner environment, and development restrictions on preserved lands that help reduce overcrowding and ease traffic concerns.

Because the demand for housing, commercial development and associated services (roads, utilities, water, etc.) in western EDC continues at an accelerated rate, development of natural habitat also continues. To accommodate ongoing development of western EDC, there could be efforts to widen and pave roads that pass through the Preserve. Some individuals have expressed interest in exploring the widening and paving of roads through the Preserve. An example would be the construction of a paved road on Preserve lands and parallel to the existing Highway 50. This road would extend along a half mile of currently protected habitat, impacting (destroying) rare plants and their habitat, further fragmenting and reducing the habitat for the rare plants, and potentially

contributing to the dispersal of non-native plants, colonization by noxious weeds and making the habitat more susceptible to trash dumping.

The 2002 FWS recovery plan establishes that the Pine Hill Preserve is the main player in the protection, management and recovery of those species. The funds to acquire many of the Preserve parcels come from contributions by the FWS, BOR, National Fish and Wildlife Foundation, the Wildlife Conservation Board, and EDC. All the federal agencies provided the funds with the express understanding that the land purchased would be used for the conservation of five federally and State listed species and the habitat on which they depend. Funds provided by EDC targeted the protection of all eight rare plant species. To use the land for another purpose that would involve significant rare plant or habitat destruction, would violate the intent under which the funds were donated and/or assigned.

Research and Monitoring

Research and monitoring at the Preserve include the need to learn more about the biology, ecology and demography of the species, as well as species' and habitat response to management activities. The main strategy will be to continue to implement research and monitoring projects to fill data gaps and uncertainties related to species distribution, habitat associations, factors affecting their reproduction (including the presence of pollinators), population numbers and changes over time. If we answer these questions we will identify (and remediate) factors that threaten the rare plants and be able to provide for the best management alternative to protect the rare plants and their habitats.

Research and monitoring needs for the rare plants at the Preserve will also be conducted to fill the gaps regarding within species and among species knowledge. For instance, we know that Stebbins' morning-glory grows from a rootstock and that it responds well to disturbance, such as a prescribed fire conducted at the Salmon Falls unit during 1991. We also know that this species seems to be shade intolerant and does not occur beneath a closed canopy of vegetation (FWS 2002), and pollination studies showed that animal vectors were needed for successful seed set (Nosal 1997). However, because the

numbers of this species in the Salmon Falls area where the prescribed fire was implemented have decreased from several hundred to a few, due to the overgrowth of chaparral, we need to determine the optimum disturbance regime (fire, shrub clearance, etc.) and the intensity/ periodicity of the regime implementation to maintain and promote the populations of Stebbins' morning glory.

We know that Pine Hill ceanothus does not resprout from its crown after a fire as do many chaparral shrub species, and therefore depends on re-establishment from seeds after a fire, proliferating before the chaparral overgrows (FWS 2002). We also know that the branches of this species develop roots when in contact with soil and that this characteristic also helps the species to extend its distribution. One study demonstrated that canopy shading affects flower and fruit production and that non-specific pollinators are required for reproductive success of this species (James 1996). Therefore we also need to determine the optimum disturbance regime (fire, shrub clearance, etc.) and the intensity/ periodicity of the regime implementation to benefit the populations of Pine Hill ceanothus, while maintaining an adequate composition of associated species to provide for the survival of its pollinators.

Studies for the Pine Hill flannelbush showed that insects, including native solitary bees, were required for pollination. One study found that seventy seventy percent of the developing fruit is destroyed by insects prior to maturing (Boyd 1996). The remaining fruit opens during summer and releases seeds onto the soil. The seeds are eaten by rodents and dispersed by harvester ants (*Messor andrei*) (Boyd 2003). This species needs fire for the establishment of seedlings, although small Pine Hill flannelbush shrubs also seem to be associated with recent human disturbance, such as vegetation removal (FWS 2002). Studies for guided to determine optimum reproduction and propagation conditions for this species may help to prevent flower and fruit predation and also help contribute to maintain and/or expand its distribution.

Very little is known about El Dorado bedstraw and information about its biology or ecology are not available (CDFG 1999). Studies about this species have concentrated at

the Pine Hill area, although recently the BLM is conducting monitoring of this species in the Cameron Park area. Preliminary results at the Cameron park unit indicate that this species may slightly benefit from removal of competition by shrubs. At the end of 2007, transplant of individuals from this species from a private parcel into Preserve lands will take place and the transplanted individuals will be monitored to determine if successful establishment and survival of this species can be accomplished. The practice of transplanting rare plants into functional habitat should not be supported over protection of species *in situ*. However, because the El Dorado bedstraw habitat occurring on the private lot will be destroyed by development, and because an area of the Preserve is in need of restoration due to a recent wildfire, there is an opportunity to relocate and protect the rare plants and contribute to the knowledge and conservation of this species.

Layne's butterweed is known to occupy openings on gabbro soils and is eliminated as vegetation grows around it (Baad and Hanna 1987). Marsh (2000) determined that the predominant breeding system for the species is outcrossing; when flower heads are pollinated by insects the production of viable seeds is higher than for flower heads where pollinators were excluded. Marsh (2000) also found that persistent, heat-resistent seed exists in the soil beneath chaparral and forming a seed bank seems unlikely because tests show that seeds germinate in the first year with no special treatment necessary to break dormancy. An ongoing research on Preserve lands by Gogul-Prokurat (2007) regarding the rare plants includes seed collection and evaluation of microhabitat sites for Laynee's butterweed. Results from this research will be extremely valuable to determine species-specific information and to identify additional plant occurrences as well as potentially suitable unoccupied habitat areas

Bisbee Peak rush rose responds well after fire or slight disturbance, such as the removal of the shrub layer. The lack of disturbance and fire suppression in chaparral may decrease opportunities for this species to establish (R. Woodward, pers. comm. 2005). Among research priorities for this species, a more precise classification of this species is required from authoritative professional botanists in order to determine if it is indeed a

unique taxon that is rare, or whether it is in fact a member of a more widespread, common taxon (*H. scoparium*).

Seed dispersal mechanisms for the Red Hills soaproot are not known and pollinators have not been identified, although moths are likely considering that the flowers are open at night. Reproduction in this species is primarily by seeds, unlike *C. pomeridianum,* a relative that reproduces vegetatively from division of the bulbs (FWS 2004). Basic studies regarding the ecology of this species would provide directions for its management needs and help to ensure its long term conservation.

El Dorado mule-ears can reproduce vegetatively by producing new above-ground stems from its spreading root system. The clonal plants can cover a large area and portions of individual plants and can be several hundred years old (Ayres 1997). This species is pollinated by native bees, is self-incompatible, and the recruitment from seed for this species is very poor (FWS 2002). Gogul Prokurat (2007) research includes this species-specific habitat information for use in predictive habitat modeling that will help identify additional plant occurrences as well as potentially suitable unoccupied habitat areas.

Identified research needs are listed in the Management Tasks section. Those needs include projects being implemented, such as conducting rare plant surveys and monitoring populations of rare plants and their habitats, and projects that will be implemented once sources of funding and other resources are obtained. Future research and monitoring needs, identified through adaptive management, will be addressed once those needs are recognized.

The Preserve will also continue to cooperate with students, researchers, agencies and institutions interested in conducting studies at the Preserve. Coordination with people, agencies and organization will also continue to obtain funds to implement research projects at the Preserve.

Habitat Maintenance and Restoration

Shrub reduction in rare plant habitat is the most important habitat restoration issue at the Preserve. Erosion control, especially along trails, is another issue that requires yearly attention. Noxious weed control, although currently not a major problem at the Preserve, also requires careful monitoring and rapid remediation before eradication becomes a problem. Trash removal and habitat destruction prevention, such as off-road driving or cutting of plants, are also part of the management challenges to restore habitat at the Preserve, especially in areas that interface with urban development.

The Preserve strategies to continue habitat restoration include control of shrubs, erosion, weeds, and remediation of trash/trespass incidents at specific areas. All these activities will likely continue at the Preserve with the help of volunteers. Preserve neighbors also provide invaluable help by reporting and preventing incidents such as illegal trespass, trash dumping and habitat destruction in the Preserve.

Education and Outreach

Community education and outreach is not only one of the main issues at the Preserve, but it is also one of the management goals. The Preserve focuses its efforts on increasing public awareness of the rare plant species, promoting understanding of the ecological, economical and social implications of preserved lands and the Preserve's responsibilities to help achieve conservation of the rare plants. Efforts are also focused on providing recreational and educational opportunities for the community and to include the community in management decisions that will affect conservation of the rare plants.

Support from surrounding communities will be vital to continue to protect land and to conduct management activities that may involve participation by the community. The Preserve has greatly benefited from the volunteer work of a Volunteer Coordinator, who helps with most of the outreach activities conducted at the Preserve. In the future, the creation of a funded Volunteer Coordinator position will be requested.

Visual Resources

The Preserve will adopt, for BLM owned lands and as a general approach for all lands at the Preserve, BLM's visual resources management (VRM) system (BLM 2006a). Generally, federal and State lands that abut or are near BLM lands utilize the VRM system for classifying their holdings. Private lands that are next to or near BLM lands are not subject to VRM guidelines when being developed or utilized for agricultural, industrial, or commercial uses (BLM 2006b).), but private lands whit natural habitat may also adopt the VRM system.

The VRM system is based on the premises that different levels of scenic values require different levels of management and that desired values can be accomplished by using the basic design elements of form, line, color, and texture of surrounding natural landscapes. Determining how an area should be visually managed requires an assessment of the area's scenic values and adjustment of project designs so that visual impacts can be minimized.

Strategies to identify and evaluate scenic values at the Preserve to determine the appropriate levels of management will be achieved by conducting a Visual Resource Inventory, and by conducting a Visual Resource Contrast Rating analysis. Outcomes of these strategies will help to incorporate visual design techniques to ensure that management activities at the Preserve are in harmony with the visual natural surroundings.

Cultural Resources

No prehistoric village/camp sites have been found in the Preserve and few have been reported for lands adjacent to the Preserve with similar terrain and vegetation. The chaparral covered hills in the Preserve were probably not an advantageous place for prehistoric people to live, although they may have been productive hunting and plant gathering grounds after wildfire had burned off the brush. Native Americans may have also ignited fires with the intention of making the chaparral a more productive habitat for game.

Finding evidence of prehistoric human uses (i.e., isolated artifacts, sparse flaked-stone scatters, projectile points, hunting blinds, etc.) in the Preserve may be extremely difficult in the chaparral areas. However, habitat protection and restoration projects at the Preserve, such as fencing, fuels reduction, erosion control and plant relocations are subject to archaeological surveys.

VI. MANAGEMENT TASKS

This section describes the techniques to address the different management issues at the Preserve. The tasks focus on the solution to management concerns as described in the Management Issues and Strategies section of this Plan.

Land Protection

The Preserve will continue its efforts to protect rare plants habitat in western EDC with the help of the different partners. The Preserve will also continue to work with private landowners to protect habitat and contribute to habitat connectivity of protected lands. Specific tasks to accomplish land protection include:

1) Identification and evaluation of suitable lands that can be added to the Preserve system. Lands with potential for protection of the rare plants will be ranked and priorities for protection of such lands will be assigned based on the following criteria, listed in order of importance:

a) habitat where most of the species are present, or with a high possibility of being present once habitat is properly managed.

b) habitat with Stebbins' morning glory, El Dorado bedstraw or Pine Hill flannelbush, three of the rare plant species at the Preserve with extremely restricted distribution.

c) habitat that is adjacent to Preserve areas, or that will contribute towards connectivity of already protected land.

d) habitat that will add to management feasibility, for instance providing direct access to Preserve lands or contributing to buffer areas that would allow implementation of prescribed burns.

2) Protection of gabbro soil rare plant habitat. Land protection will be accomplished through:

a) acquisition of habitat from owners willing to sell their lands for conservation purposes.

b) special designation of publicly owned lands for conservation of the rare plants.

c) promotion of cooperative agreements with land owners interested in conservation and recovery of the rare plants and their habitats.

d) acquisition of large parcels and adjacent to preserved lands, preferred over acquisition of smaller, non-connected parcels.

e) acquisition of parcels at the lowest cost possible.

f) evaluation of existing agreements, such as conservation easements, to provide for the protection of rare plants and their habitats on privately owned lands.

3) Identify and obtain sources of funding for land protection activities, including land acquisition, establishing and/or acquiring conservation easements, conducting survey and monitoring projects, patrolling, posting, signing, fencing and other activities guided towards the protection and enhancement of rare plant habitat. Main sources of funding to be pursued include:

a) The BOR/USFWS Central Valley Program Improvement Act (CVPIA) Habitat Restoration Program.

b) USFWS Cooperative Endangered Species Conservation Fund (Section 6).

c) EDC and EDID development fees set aside for rare plant conservation purposes.

d) Federal and State processes (Sec. 7 and 2081(b), respectively) designed to mitigate impacts of development on listed species.

e) BLM base and cost shared funds.

f) Other sources of funding that may be identified over the term of the plan.

4) Implement a regular program for patrolling activities at the Preserve. Patrolling activities will be conducted by the Preserve manager in coordination with BLM Law Enforcement staff. Volunteers will also contribute to patrolling activities by reporting to the BLM office incidents such as trespass, trash dumping, etc. The patrolling program will include:

a) visit the different units no less than once every two weeks and, at units like Cameron Park, where trespass, trash, restoration and other issues require more frequent visits, patrolling will be conducted at least once per week.

b) communicate with neighbors to prevent and remediate trespass, trash, off-road driving, and other incidents, issues, at problem areas.

c) coordinate patrolling activities will be conducted in combination with other management activities (surveys, monitoring, restoration projects). Frequency of visits will be increased or decreased as needed.

5) Conduct development of infrastructure to aid with the protection of Preserve lands. Infrastructure development activities will include:

a) identification of Preserve boundaries by placing permanent posts and signs.

b) construction of fence lines in areas where Preserve boundaries are expected to be permanent and where fencing is feasible.

c) placement of temporary post and signs in areas where the Preserve is more likely to expand it boundaries.

Inappropriate Fire Regime

Emphasis will be placed in the management of vegetation to reduce excessive fuels load at strategic areas, for instance along the interface of Preserve lands and densely populated areas. Because of the reasons discussed in the Management Issues and Strategies section, the use of fire at the Preserve for habitat restoration purposes will not always be a possible action. Techniques that will be implemented at the Preserve to manage vegetation to benefit the rare plants habitat include:

1) Implementation of prescribed burns when possible. The use of controlled fire will be preferred over other techniques to help decrease the excessive fuels load and improve habitat for the rare plants. The following criteria will be followed when implementing prescribed burns activities:

a) safety for human lives and property will be top priority.

b) a fire plan will be developed for every prescribed burning activity.

c) the Preserve will work in close coordination with CDF and the BLM fire crews when implementing prescribed burning activities.

d) the Preserve will obtain the adequate permits/authorizations to conduct prescribed burning activities.

e) the Preserve will implement an intensive outreach program to inform neighbors about planned prescribed burning activities and give the community an opportunity to express their support, concerns, etc.

f) the Preserve will work in coordination with the EDC Fire Safety Council to conduct education and outreach activities with the community regarding fire safety issues.

g) the Preserve will carefully monitor prescribed burning effects on the rare plants and their habitat.

2) Implement other fuels reduction activities, when the use of prescribed burning may not be feasible. Techniques that provide an alternative to fire include:

a) removal of vegetation by field crews using hand tools.

b) removal of vegetation using mechanical equipment such as masticators, chippers, weed eaters and mowers.

3) Construction of fuels break lines, at areas with higher risks for non-controlled fires using fire and/or mechanical methods.

4) Continue to create and maintain an approximately 25-acre fuels break along portions of the perimeter of the Cameron Park Unit and in areas adjacent to residential development, where dense and decadent chaparral is present.

5) Conduct educational and outreach efforts with communities adjacent to the Preserve that may be at risk, to decrease possibilities of a non-controlled fire.

6) Monitor the rare plants to assess the response to shrub removal. Currently the BLM is monitoring effects of shrub removal competition on El Dorado bedstraw, Pine Hill

ceanothus, Stebbins' morning glory and El Dorado mule ears. This monitoring will continue and monitoring of other rare plants will also be conducted after implementation of shrub removal treatments.

7) Implement adaptive management based on responses to fire by the rare plants.

8) Continue to work in coordination with CDF, EDC Fire Safety Council, BLM, BOR and other partners on:

a) potential fuels reduction projects to be implemented at the Preserve.

b) identification of funding sources for preparation of fire plans and implementation of fuels reduction activities.

c) community and education outreach activities.

Access

The Preserve continues to look for viable options to access Preserve lands, both to conduct management activities and to provide for education and outreach opportunities. Improving the access conditions at the Preserve units will be accomplished by:

1) Identification and mapping of potential direct access points to the different Preserve units.

2) Acquisition of parcels and/or access easements to facilitate direct access to the Preserve.

3) Development of agreements with neighboring land owners to provide access to the Preserve lands through existing facilities, roads, parking areas, etc.

4) Designation and development of parking areas at at least two Preserve units: the Cameron Park and the Salmon Falls.

5) Maintaining the current pedestrian approach to visitor management at the Preserve areas where this approach is successful.

6) When necessary, closure of certain areas within the Preserve may be implemented as an interim measure to address issues such as extreme fire danger, road danger, or to protect a recently restored area. Closures will likely be temporary, signs will be posted at main entry points to this area, and maps of the closure area will be provided to the public.

Roads and Trails. Facilities for visitors, including construction and or maintenance of roads and trails will be consistent with planned public uses outlined in the Management Issues/Strategies section of this Plan, i.e., educational activities and low impact recreation.

1) The basic access planned through roads and trails will be concentrated at access points to both the Cameron Park and Salmon Falls units.

2) Trails for public access will be designated in both the Cameron Park and Salmon Falls units.

3) Planned trail development and use at the Salmon Falls area will include the following considerations:

a) if the regional trail along the north side of the South Fork of the American River is developed, a portion of that trail will cross the Preserve and the actual route of such a trail will be chosen to avoid impacts to the rare plants.

b) a trail system on the south side of the river in the Salmon Falls unit will be for pedestrian use.

c) trail(s) will have a dual purpose, both recreational and interpretive.

d) potential biological impacts on the rare plants will be a major determinant of trail location trail routes will be chosen to minimize such impacts.

3) Planned trail development and use at the Cameron Park area will include the following considerations:

a) the trail system will also have the dual purpose of assist with management activities ad provide access to the public.

b) a self guided interpretive trail will be created with a trailhead at the parking area.

c) walking trails for neighborhood use will also be designated.

d) the already existing numerous roads and trails will provide the basic framework for the trail system.

e) the closure of unneeded roads and trails will be an important task in creating a designated trail system.

f) closing of roads that are not used for management, recreation or access to the Preserve.

g) creation of new trails if absolutely needed for management or public use.

4) Maintaining the few trails that provide access within the different Preserve units on a yearly basis will include:

a) control of erosion.

b) prevention of shrub overgrowth.

c) control of weeds.

5) Continued work with Preserve staff and volunteers to provide ongoing maintenance for some of the existing roads will include:

a) restoration of existing roads.

b) eradication of weeds along existing roads.

6) Identify and implement appropriate measures to minimize impacts on rare plant habitat while providing road and trail maintenance, management and public access.

Parking areas

Development of at least two parking areas at the Preserve edges is contemplated in this

Plan and economic evaluation of the cost for these two sites is included in the Property Analysis Record (Appendix X). Tasks for the development of parking areas include:

1) Determine the best feasible areas for parking lots. Proposed areas include:

a) areas along Meder Road and Cameron Park Drive in the Cameron Park unit.

b) areas near Sabana Drive and Parker Drive in the Cameron Park unit.

c) an area along Kanaka Valley Road in the Salmon Falls unit.

2) Design and develop parking areas, one at the Cameron Park unit and one at the Salmon Falls. Both parking areas will be provided with:

a) a concrete pad.

b) a bathroom.

c) interpretive and visitation rules information to visitors.

Preserve Public Uses

Most activities usually allowed on public lands are also allowed in the Preserve as long as they do not conflict with the protection of the rare plants and their habitat. Public activities at the Preserve and the associated management tasks take into consideration the following:

Special Designation Areas. Although the CDFG PHER sites at the Preserve, which includes parcels at the Pine Hill and Salmon Falls units have special regulations, the public is not totally restricted and can visit the site with authorization by the CDFG and the Preserve Manager.

1) Uses of the PHER sites within the Preserve include:

a) Guided tours to classes and the general public for educational purposes.

b) Non-guided tours for people visiting the sites for authorized research purposes.

c) Non-guided tours for people hiking along established trails for minimum impact recreational purposes, such as wildlife viewing and photo shooting.

2) Restriction of public uses at the PHER sites within the Preserve to prevent damaging or destroying rare plants include:

a) Uncontrolled access

b) Use of off road vehicles

c) Use of mountain bikes

d) Walking around the site and outside of designated roads or trails.

e) No horses are permitted within the PHER boundaries.

3) General public uses at the Preserve units, at sites other than PHER sites, is permitted with protective measures incorporated to protect the rare plants. The protective measures include:

a) Operation of motorized vehicles within the Preserve units is not allowed, unless authorized by the Preserve under special circumstances.

b) The use of internal combustion engines, camping, campfires, smoking and fireworks is not allowed.

c) From time to time there may be a need to temporary close certain access roads and certain areas are to all public uses that could result in igniting a wildfire and/or damaging or destroying federally-listed threatened or endangered plant species.

e) If temporary closure of certain areas at the Preserve is deemed necessary, signs will be posted at main entry points to these areas and maps of the closure areas will be provided to the public.

4) If areas at the Preserve, other than the PHER sites, become ACEC by designation under the BLM Folsom Office Resource Management Plan process, restrictions to the following activities may apply:

a) large-scale mining.

b) construction of high-voltage transmission lines.

c) construction of roads.

d) telecommunication towers

e) other activities that may deemed detrimental to the rare plants.

5) Temporary closure of specific areas as an interim measure to address concerns such as extreme fire danger, areas with erosion problems, and areas recently restored. Closure signs will be posted at main entry points to this area. Maps of the closure areas will be available and provided to the public as needed.

Off-road Vehicles. Although in general off-road vehicle is not a compatible use for the Preserve, the following applies under the current status of Preserve's BLM lands:

1) Miners with valid mining claims on BLM lands may retain vehicular access to those claims for mining activity through BLM roads. The BLM does not regulate access to mining claims on BLM lands through private lands.

2) Easement and right-of-way (ROW) holders will be able to access and use their easements and ROWs, as long as they limit their activities to the established easement and ROWs areas. The BLM does not regulate access to easements or ROWs on BLM lands through private lands.

3) Some roads may be retained for administrative or fire suppression purposes but will not be open for public use.

4) Locked gates may be used, with keys issued to those who need access.

Equestrian and Mountain Bike Use. Occasional use of existing trails for equestrian and mountain bike use may be authorized if impacts to sensitive resources can be minimized. The following list identifies actions that will be undertaken to minimize impacts on the rare plants ant their habitat:

1) Users should obtain Preserve's authorization to conduct such activities.

2) Traffic in areas where the rare plants are present will be avoided.

3) Prevent the dispersal of non-native plants by users, this can be accomplished by BLM requests that bikes will be cleaned prior to entrance to the Preserve, and that horses entering the Preserve are fed with weed-free hay.

4) Engage users in helping to conduct periodic trail maintenance, including erosion and weed control.

5) Suspension of equestrian and bike use activities if there are conflicts with protection of the rare plants, and continue activities only after remediation of conflicts.

Day Use Camping. The following currently applies or will apply for camping within the non-special designation areas at the Pine Hill Preserve:

1) Accessible areas of the Preserve will be designated as day use areas, open from one half-hour before sunrise to one half-hour after sunset.

2) Overnight camping is not allowed (except as described below for miners and dredgers) because of potential impacts to resources and the cost of monitoring and managing such use.

3) Camping ("occupancy") by miners with valid existing mining claims is currently permitted under the 1872 Mining Law, if it is "reasonably incidental to mining."

4) If BLM land in the Preserve is designated an ACEC, mining claimants will have to file a Plan of Operations for all activities beyond casual use, such as camping or occupancy.

Boating Access. Unlike terrestrial forms of travel, boating should have little effect on plant species and communities in the Preserve.

1) "No Camping" signs will be posted at areas that attract occasional campers.

2) Management will be consistent with river management in the BLM South Fork American River Management Plan.

Extension of Existing Public Roads/Highway Projects

In general, the creation of new roads, or extension of existing ones on Preserve lands will be discouraged because of the associated destruction and/or further fragmentation of the already restricted habitat for the rare plants. To determine potential impacts of potential road extension project on Preserve lands the following activities will be conducted:

1) Detailed surveys and mapping of rare plant occurrences should be required for areas with potential for extension of existing public roads/highway projects.

2) A careful analysis of potential impacts to population(s), including distribution of occurrences and significance in relation to the entire population.

3) A full mitigation plan, as required by the federal and State regulatory wildlife agencies to offset detrimental effects of the project on the rare plants.

Research and Monitoring

Main research tasks at the Preserve will continue to focus on recovery of the federally listed rare plants, conservation of the non-listed species, and accomplishing the Preserve's mission to protect all rare plant species in perpetuity. Research and Monitoring tasks at the Preserve will also help to answer more specific questions regarding the rare plants and habitat responses to different management practices, particularly to fuels reduction practices. For instance, although most of the rare plants seem to respond favorably to fires under certain conditions, the inadequacy of the fire regime may negatively impact the species; therefore research guided to identification of the most adequate regimes for fires or other techniques used to eliminate shrub competition, will be studied. Main research needs also include the acquisition of basic

knowledge regarding the rare plant distribution, estimated numbers, habitat relationships, etc. Tasks to accomplish the research needs include:

1) Conducting plant surveys at the Preserve to evaluate the degree of protection afforded to the five federally listed plants in relation to recovery plan targets. Activities to accomplish this task include:

a) development of species and habitat survey protocols.

b) acquisition of Geographical Information System (GIS) imagery for the Preserve.

c) development of a GPS/GIS application for collection of data in the field.

d) completion of plant/habitat surveys of at least 4,000 acres on the Preserve over a period of three years, beginning during 2006.

e) production of maps and information about distribution and estimated numbers of the rare plant populations by 2009.

f) identify current protection status of each species and sites, and conduct updated assessments of threats to rare plants associated with lands adjacent to Preserve sites

2) Evaluating relationships between rare plant population distribution and the characteristics of the habitat. Activities to accomplish this task include:

a) establishing baseline conditions for listed species and habitat using plots at the Preserve.

b) analyzing newly acquired and existing data regarding species distribution.

c) creating GIS baselines of species occurrences and environmental correlations.

d) creating a predictability model to find areas of most suitable habitat for the rare plants (e.g. soil characteristics, plant associations, microtopography, fire history, etc.) to be used to refine and/or efficiently expand the protection to rare plants.

e) monitoring response of species to management treatments.

3) Evaluating effects of fire regimes on the distribution of the rare plants. Activities to accomplish this task include:

a) review of fire history at the Preserve.

b) review of historical rare plant occurrences at the Preserve.

c) evaluation of recent prescribed burns (within the last 6 years) on rare plant habitat.

d) evaluation of fuels reduction methods on rare plants at the Preserve.

4) Continuing conservation planning for rare plant habitat including:

a) identification of pending conservation needs for the rare plants.

b) design and protection of linkages between populations, and identification of the most critical links for genetic exchange between populations.

5) Evaluating and successfully implementing adaptive management, based on:

a) identification of best management practices based on results and information from previous research and management actions, as found in monitoring reports, research papers, and documentation of management decisions and implementation processes at the Preserve.

b) periodic review of management techniques used to obtain the best results for rare plant and habitat conservation.

c) establishment of a formal adaptive management decision making process for changing plan management actions based on new information.

6) Conducting monitoring and research activities that will help us to better understand and manage habitat for each of the rare species including:

a) data collection and creation of maps to estimate current population densities and trends over time.

b) genetic studies to determine metapopulation relations/dynamics, or variation within single large occurrences of this species.

c) identification of germination requirements, and percentage of plants for each species growing from seed, rootstocks, bulbs or branches.

d) evaluation of shade effects of shrub species on rare plants.

e) identification and monitoring of seed and fruit gatherers.

f) evaluation and monitoring of rare plant responses to the removal of the shrub layer.

g) information gathering regarding pollinators for these species.

h) identification of seed dispersal mechanisms.

h) creation of GIS layers and maps to help with effective management of these species.

7) Establishing a long-term, regularly implemented monitoring program for the rare plant populations at the Preserve. This program will include:

a) identification of measurable characteristics that can be used to track significant changes in rare plant populations and their habitats.

b) the use of monitoring plots to collect, compare and analyze rare plant demographic information.

b) identification of thresholds that will trigger changes on habitat or species management practices.

Habitat Maintenance and Restoration

Main habitat restoration techniques will continue to be implemented with the help of volunteers and Preserve staff, and the collaboration by the different Preserve partners.

1) Control of the shrub layer will continue to be implemented using controlled burns and mechanical removal methods.

2) Control of erosion at specific areas within the Preserve will continue to be implemented by constructing water bars along eroded trails and roads. Areas within the Preserve where soil erosion by water during the rainy season has become a problem will be restored by re-contouring of the water flow and the placement of materials that will slow down and control the erosion, including straw wattles and sediment barriers.

3) Control of weeds using exclusively mechanical methods will continue to be implemented at specific areas within the Preserve. Mechanical methods at the Preserve have proven to be effective to control weeds at the Preserve. The use of chemical control within the Preserve boundaries is discouraged, but its use will be considered if absolutely necessary.

4) Trash removal at the different Preserve units, especially the ones closer to densely population areas, will continue to be conducted on a regular basis with the help of volunteers.

Education and Outreach

The Pine Hill, Cameron Park and Salmon Falls units within the Preserve are better suited for educational and outreach activities than the Martel Creek and Penny Lane units. The Pine Hill unit has been a traditional location of botanical and environmental resource interpretation and the CNPS has led trips there for decades. Both the Pine Hill and Cameron Park units are well suited for interpretive activities, with extensive panoramic views and the rare plants clustered in a relatively small area. The Salmon Falls unit and surrounding areas provide with thousands of acres of natural habitat, where functional ecological systems can be observed, studied, and managed. Education and outreach activities at the Preserve include:

1) Continue to implement an interpretative program of guided walks to the different Preserve units.

a) at least 5 weekend tours will be conducted during Spring time.

b) weekdays tours to students groups will be conducted as requested during the months of April-June.

c) the Preserve will also accommodate for special interest guided tours (geology, fire management, etc.) year round.

2) Continue to provide for general public education about rare plant protection at the Preserve by:

a) providing with opportunities to observe wildlife under natural conditions.

b) providing with opportunities to conduct studies and research at Preserve lands.

c) mentoring students interested in promoting the conservation and protection of the rare plants by developing study papers.

3) Continue to train volunteer naturalists who will conduct guided tours, school outreach, and participate in community activities to help promote the Preserve's mission.

4) Develop interpretive displays for school outreach, participation in botanical and scientific events, technical presentations and community events. Displays will include:

a) Powerpoint presentations

b) interpretative posters

c) brochures

d) mounted plant specimens

5) Increasing public awareness of the rare plant species, an understanding of the regulations and incentives for conservation and management needed to achieve species conservation/recovery. To achieve this task we will use:

a) brochures

b) press releases

c) website

d) development of electronic newsletter

6) Cultivate the existing volunteer habitat restoration team to help:

a) maintain trails

b) control erosion

c) conduct revegetation of disturbed areas

d) eradicate noxious weeds

e) build fences

f) place posts and signs

7) Continue to promote recruitments of volunteers, either as organized groups or as individuals including:

a) scientific organizations such as UC Davis, UC Berkeley, Sac State University and the Chicago Botanical Garden

b) religious groups, such as the Temple of Rishon

c) families

d) boy/girl scouts groups

e) schools

f) anyone with enthusiasm about nature

8) Facilitate for student community service activities of local colleges and high schools. Under this task an agreement between the Preserve and the educational institution should be in effect prior to student participation. Students participating in community service activities are provided with a certificate by the Preserve.

9) Coordinate with the surrounding counties to get the information about the educational outreach opportunities of the Pine Hill Preserve into the hands of the schools and classrooms of the following districts under the EDC Office of Education:

a) Rescue Union School District

b) Buckeye Union School District

c) Gold Trail Union School District

d) Latrobe Union School District

e) Mother Lode Union School District

f) Gold Oak Union School District

g) Placerville Union School District

10) When appropriate facilities, such as parking areas, bathrooms and kiosk(s) are built, a program for field trips to the Preserve will be offered to elementary schools, to engage students and promote an overall awareness of the ecology of the Preserve and the significance of protecting this unique resource.

11) Interpretative stations at the strategic areas of Cameron Park, Pine Hill, and/or Salmon Falls units will be established, as funding becomes available; these stations may include:

a) displays and/or kiosks placed at each designated trailhead, as funding becomes available.

b) creation of interpretive trails

c) establish at least one self-guided interpretive trail at the Cameron Park unit. when funding becomes available.

12) The Preserve will attend and participate in as many community events as possible to acquaint the public with the Preserve and its ecological diversity. Such events include:

a) El Dorado County Fair

b) Harvest Festival

c) American River Salmon Festival

13) Special outreach activities, with the sole purpose of fuels management and fire ecology education and management at the Preserve will also continue to be conducted. These activities will include:

a) educational and community outreach about fire ecology and the need for fuels management at the Preserve.

b) attempts to contact and consult surrounding property owners regarding any fuels reduction work on Pine Hill Preserve.

c) contacting landowners or occupants by visiting homes door-to-door whenever possible, when occupants are not at home, informational materials will be left for them to read.

d) providing brochures and other materials will be used to educate Preserve neighbors about fire ecology and the need for fuels management.

f) conducting education about the importance of fire ecology and fuels management on guided walks and in community and educational outreach of the Preserve.

g) developing interpretive materials, such as PowerPoint presentation and display board will incorporate the importance of fire ecology and fuels management.

Visual Resources

To protect, maintain and enhance the visual quality of the Preserve, the following tasks will be conducted:

1) Identify the visual resources at the Preserve and assign them to inventory classes using BLM's VRS inventory process. This process will include rating the visual appeal of the different units, evaluation of the management needs for the rare plants and evaluation of the public concern for scenic quality.

a) management of an area with high scenic value might be focused on preserving the existing character of the landscape.

b) management of an area with little scenic value might allow for major modifications to the landscape.

2) Assign a Class level Objective to the different units at the Preserve, in accordance with the BLM Handbook H-8410-1, Visual Resource Inventory to asses scenic values and determine visual impacts, in an objective and consistent way, by:

a) using the basic design elements of form, line, color, and texture to describe and evaluate landscapes.

b) adjusting project designs so the elements are repeated, visual impacts can be minimized. Projects that repeat these design elements are usually in harmony with their surroundings; those that don't create contrast.

c) applying visual design techniques to ensure that surface-disturbing activities are in harmony with their surroundings.

3) Through management activities, retain the general existing character of the landscape. The level of changes to the characteristic of landscape should be low to moderate, and should take into consideration natural regimes (such as changes caused by fires) in the area.

4) Conduct analysis of proposed management activities to meet management objectives or to incorporate required adjustments.

Cultural Resources

Although the potential for significant cultural resources, both historic and prehistoric, to occur in the Preserve appears to be low, the Preserve agencies will:

1) Comply with Section 106 of the National Historic Preservation Act and other cultural resource laws and executive orders in advance of any projects with potential adverse effects to cultural resources. Projects at the Preserve that may affect cultural resources include building trails, parking lots, and other facilities for public access.

2) Identify, preserve, and protect the Preserve's cultural resources and fill in gaps to gain knowledge about representative cultural resources at the Preserve by:

a) conducting cultural surveys of at least 30 percent of the Preserve lands.

b) conducting inventory of cultural resources at the Preserve.

d) revisiting areas of dense chaparral previously inventoried and where cultural resources may have been overlooked; this activity could be especially effective on recently burned areas.

e) including in the inventory areas of dense chaparral that have received little attention, as long as surveys are not detrimental for the rare plants.

3) Avoid adverse effects on cultural resources while conducting and implementing habitat management activities at the Preserve, such as plant inventories, clean up of trash, noxious weed eradication and native plant revegetation, to ensure that:

a) significant historic-period artifacts are not cleaned up.

b) significant subsurface archaeological deposits are not disturbed.

4) Develop detailed historic contexts for better understanding and evaluating the Preserve's cultural resources. These historic contexts can be generated through primary document and oral historical research, and will include:

a) gold mining.

b) fire history.

c) homesteading.

VII. FINANCIAL SECTION

Only management activities at the Preserve have been considered under this financial section. Costs for future land purchases, such as acquisition, closing, etc., have been excluded from the Preserve's management needs economic analysis. The evaluation of biological qualities of parcels targeted for acquisition is the only associated land acquisition cost that has been included in the economica analysis. The evaluation often consists of a survey to a particular parcel to determine its ecological value in relation to the Preserve goals.

Already established management projects, such as patrolling and restoration activities were considered in the economic analysis. Future feasible projects, such as fence lines along strategic sites at the Preserve, the purchase and installation of signs, and implementation of new restoration activities mentioned in the Management Tasks section of this Plan were also considered.

Some of the foreseeable research and monitoring needs, and activities needed to conduct biological surveys and to produce reports, are also accounted in the economic analysis. However, cost of particular future research needs at the Preserve is not part of this economic analysis. Future research needs will be identified through implementation, monitoring and adaptive management activities at the Preserve. The approach to fund future research to provide solutions to management needs at the Preserve will be accomplished by applying and obtaining grants and through coordination with professionals, colleges and universities to conduct studies that will result in benefit of the rare plants.

Costs for development of infrastructure (fencing, development of parking areas, visitor's stations, etc.) were considered in the economic analysis, although those needs may need to be modified in the future as the Preserve continues to change in size and shape.

Property Analysis Record

The economic analysis was prepared using the Property Analysis Record (PAR) (Appendix 5), a computer program developed by the Center for Natural Lands Management. The PAR is an effective tool to determine costs for different management tasks at the Initial and Capital level (up front cost of management projects) and the Ongoing level (recurrent costs with an established periodicity). The PAR also calculates the amount of endowment funds required for management of lands in perpetuity.

Financial requirements

Initial and Capital requirements for the different management tasks at the Preserve with a contingency fund of 10% and 22% of administrative costs, is $572,550.

The Ongoing financial requirements, equivalent to a yearly budget for the Preserve, with 10% contingency amounts to $227,947.

The endowment required to provide income for the yearly budget, based on an estimated 4% of return interest rate is $6,271,225. Based on these calculations, the endowment per preserved acre equals $1,424.

Funding sources

Currently, ongoing management and research activities at the Preserve have been funded by a combination of federal, State, and County funds, federal grants, and by in-kind contributions by private groups such as ARC, CNPS and an effective network of volunteers established and managed by the Volunteer Coordinator. All these agencies, organizations and volunteers are expected to continue their contributions to the Preserve.

Specific funding mechanisms that will help to build the endowment of the Preserve for its management on perpetuity include mitigation fees set aside by EDC for the rare plants habitat management, contracts and agreements with different Preserve Agreement parties (EDID, EDC, CDF, ARC), Management Grants (BOR, FWS) and Contributed Funds (BLM).

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LIST OF APPENDICES

COOPERATIVE MANAGEMENT AGREEMENT FOR THE PINE HILL PRESERVE, EL DORADO COUNTY

INTRODUCTION

With this agreement three federal and two state agencies, one county government, one county agency, one special district, and a local non-profit conservation group agree to pool their resources to conserve eight rare[1] plant species and the ecosystems that they inhabit. Five of these plant species are listed as endangered or threatened under both the state and federal Endangered Species Acts.

The ecosystems to be conserved occur on a large intrusive igneous body of the rock type gabbro in western El Dorado County. The uncommon properties of gabbro are the basis of the unusual plant communities that occur around Pine Hill. The geologic formation extends from approximately 2 miles south of Highway 50 in Cameron Park to one mile north of the South Fork of the American River, near Salmon Falls. Conservation will be accomplished by the establishment of a preserve system consisting of different sites. The preserve sites represent the extent of the geologic formation and the best remaining examples of the diversity of habitat types that the rare plants occupy.

AGREEMENT

This Cooperative Management Agreement ("Agreement") is made and entered into as of July 18, 2006 by and among the U.S. Bureau of Land Management (hereinafter referred to as "BLM"), the California Department of Fish and Game (referred to as "DFG"), El Dorado County (referred to as "EC"), U.S. Fish and Wildlife Service (referred to as "USFWS"), California Department of Forestry and Fire Protection (referred to as "CDF"), El Dorado Irrigation District (referred to as "EID"), U.S. Bureau of Reclamation (referred to as "BOR"), the American River Conservancy (referred to as "ARC"), and the El Dorado County Water Agency (referred to as "EDCWA").

This agreement is based on the following representations and statements of purpose:

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[1] Throughout this Agreement, the term "rare" is used to mean unusual or scarce, and does not refer to "rare" plant species as defined in Fish and Game Code section 1901.

PURPOSE

This Agreement defines the goals, roles and responsibilities of the parties to this agreement ("Parties") for managing and administering all portions of lands currently owned by BLM, DFG, EC, USFWS, CDF, EID, BOR, ARC or EDCWA in western El Dorado County within the boundaries shown on the map titled Figure 1, (hereafter referred to as the "Pine Hill Preserve" or the "Preserve"), as of the date of this Agreement, and such other lands as the Parties add by amendment to this Agreement. Lands within the Preserve in which any of the Parties hold or obtain a lesser interest, such as a conservation easement, may also be subject to this Agreement, or added by amendment, with the recognition that lesser interests in land may be subject to constraints that affect the management of such lands. Furthermore, pursuant to this Agreement, the Parties intend to develop a detailed Preserve management plan reflecting the goals and responsibilities defined herein.

The Parties that either currently hold title or anticipate acquiring title or lesser interests, such as conservation easements, to lands within the Preserve, desire to coordinate to the fullest extent possible the protection, care, regulation, administration, improvement, restoration and management of those lands. The Parties recognize that their respective interests in those lands are subject to different authorities and policies, and may be subject to different constraints that affect their management, but that this Agreement is intended by the Parties to define an administrative process and to facilitate cooperation, and consistency among the Parties and their management of the Preserve lands to the greatest extent possible.

AUTHORITY

This Agreement is entered into under the following authorities of the Parties, among others:

BLM: The Endangered Species Act of 1973, Sec. 2 (c)(1) and Sec. 7. (a)(1).
The Federal Land Policy and Management Act of 1976, Sec. 307 (b).

DFG: Fish and Game Code Section 1802.

EC: The authority of the County's participation is: California Constitution article XI, section7, which provides, "A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws."

USFWS: Endangered Species Act, as amended.
Fish and Wildlife Coordination Act, as amended.

CDF: Authority: California Code of Regulations, Section 4126 - State Responsibility Areas for Fire Protection. The CDF has the direct protection responsibility for the purpose of preventing and suppression of fires that occur within El Dorado County encompassed by the Pine Hill Preserve.

EID: The authority for the El Dorado Irrigation District is California Water Code, Division 11 (Irrigation District Law), 20500 et. seq.

BOR: The Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq., and section 3406(b)(1) of the Central Valley Project Improvement Act (CVPIA), Title XXXIV of P.L. 102-575, October 30, l992.

ARC: As a non-profit, 501(c)(3) public benefit conservation organization, the American River Conservancy's stated mission includes participation in the conservation and recovery of listed species.

EDCWA: The authority of El Dorado County Water Agency is California Water Code Appendix, Chapter 96, El Dorado County Water Agency Act.

THEREFORE, the Parties mutually agree as follows:

1. APPLICATION OF THIS AGREEMENT - This Agreement applies to the administration and management of the following lands:

A. All Preserve lands to which any Party holds fee title as of the date of this Agreement (shown in Fig. 1).

B. Other lands in the vicinity, if fee title is acquired in the future and the acquiring party or parties and all Parties to this Agreement agree, by written amendment hereto substituting a new Figure 1, to have such other lands administered and managed in accordance with terms of this Agreement.

C. Other lands in the vicinity, if a lesser interest than fee title, such as a conservation easement, is acquired in the future for the purpose of rare plant preservation, the terms of the lesser interest permit the administration and management of such lands in accordance with the terms of this Agreement, and the acquiring party or parties and all Parties to this Agreement agree, by written amendment hereto substituting a new Figure 1, to make such lands subject to this Agreement.

D. If a Party or Parties to this Agreement acquire in the future a lesser interest

in other lands in the vicinity for the purpose of rare plant preservation, but the terms of that lesser interest do not permit the administration of such lands in accordance with the terms of this Agreement, each Party agrees that such lands shall be managed, to the extent possible, in coordination, cooperation, and consistently with the terms of this Agreement and the activities of the other Parties.

2. GOALS

A. The primary goal of the Pine Hill Preserve:

The primary goal of the Pine Hill Preserve, in accordance with the Preserve's mission, is the preservation in perpetuity of the rare plant species and plant communities of the western El Dorado County gabbro formation. The unusual properties of the rock of this geologic formation and the Rescue series soils that have developed there, have given rise to a unique vegetation with at least three endemic species. Five species occurring at the Preserve are listed as endangered or threatened under both the state and federal Endangered Species Acts:

Calystegia stebbinsii	Stebbins' morning glory
Ceanothus roderickii	Roderick's ceanothus
Fremontodendron decumbens	Pine Hill flannelbush
Galium californicum ssp. sierrae	El Dorado bedstraw
Packera layneae	Layne's butterweed

Two other species are listed on the California Native Plant Society's List 1B, indicating that they are "plants rare, threatened, or endangered in California and elsewhere":

Chlorogalum grandiflorum	Red Hills soaproot
Wyethia reticulata	El Dorado mule ears

An eighth species is listed on the California Native Plant Society's List 3, their review list for plants for which there is presently insufficient information to determine conservation status.

Helianthemum suffrutescens	Bisbee Peak rush rose

A recovery plan for six of these species (the five state and federally listed species, and Wyethia reticulata) has been issued by the U.S. Fish and Wildlife Service ("Recovery Plan for Gabbro Soil plants of the Central Sierra Nevada Foothills"). The Preserve is a primary feature of the recovery plan.

The plant communities that the Preserve is designed to protect include at least

nineteen additional species that are either endemic to, or characteristic of, gabbroic or serpentine soils.

B. The secondary goals of the Preserve are:

(a) Promote research to find management techniques that achieve the primary management goal. Because these plants and plant communities evolved in a dynamic ecosystem that involved periodic fire among other disturbances, effective management to preserve this ecosystem will require intervention by managers. To optimize that intervention, research evaluating the impacts of different management strategies will be fostered. Additional areas of research that are relevant to successful management of the Preserve are described in the draft Recovery plan.

(b) Accommodate and facilitate educational activities including teaching, interpretation, and research that are appropriate to the Preserve and compatible with the Preserve's primary goal.

(c) Institute a fire/fuels management program with three objectives:

(1) Vegetation management to promote the viability of the rare plant species of the Preserve, in a manner consistent with objective (2).

(2) Protection of adjacent properties and structures from the threat of wildfire.

(3) Education of the public about fuels management and prescribed fire.

(d) Provide low impact recreational opportunities that are appropriate to the Preserve and compatible with the Preserve's primary and other secondary goals.

3. **COMMON RESPONSIBILITIES** - In accordance with their respective rights, responsibilities, and authority, and in applying their respective expertise, skills and knowledge, the Parties shall do the following:

A. **Management Plan**: Develop and adopt a phased management plan for the Preserve, which may provide for separate specific management plans to be drawn up in the future for individual units within the Preserve. The Management Plan will be consistent with and in furtherance of, the provisions of this Agreement. The Management Plan will:

(a) detail management activities including habitat management, fuels management, infrastructure construction and management;

(b) describe public use;

(c) identify threats to the special status plants within the Preserve and management actions to eliminate or minimize those threats;

(d) set goals and establish a mechanism to promote research needed to inform management;

(e) establish monitoring objectives;

(f) define specific activities to be undertaken and funded by each Party on an annual basis to accomplish Preserve goals;

(g) define the rules governing all activities to take place on the Preserve;

(h) provide for the development of annual work plans described in Paragraph 7 below, to carry out provisions of the Management Plan.

Management of the Preserve will adapt to information from research and the monitoring of outcomes of ongoing management. The Management Plan will be written to allow for flexibility in response to the accumulation of new information.

The target date for adoption of the Management Plan is December 1, 2006. The Parties agree to meet and/or delegate responsibilities in this regard as needed to develop the Management Plan.

B. **Research**: Promote, develop, screen, review, and approve or disapprove research projects (in consultation with all agencies affected by such projects) that would affect the ecosystems of the Preserve. Promote research that addresses issues critical to Preserve management through funding (when possible), the pursuit of grants, and outreach to educational institutions.

C. **Public Awareness**: Enhance public awareness of the species and plant communities of the Pine Hill gabbro formation through on-site and off-site interpretation. Use the example of the Pine Hill formation to enhance public knowledge of broader ecological issues such as ecosystem processes, the role of fire in ecosystems, and biodiversity. Focus on-site public interpretation at the Cameron Park Unit.

D. **Law Enforcement**: Cooperate in the enforcement of laws, rules and regulations consistent with their respective statutory and regulatory authorities by

coordinating staff responsibilities and working with local, state and federal law enforcement officials.

E. **Resource Protection**: Conduct their respective programs and otherwise exercise their authority and carry out their responsibilities on the Preserve in a manner intended to protect the natural resources of the Preserve.

4. MANAGEMENT AGREEMENT ADMINISTRATORS - To carry out this Agreement and to ensure the coordinated management of the Preserve, the Parties agree to each designate an administrative representative for this Agreement. Moreover, all Parties will be given a minimum of 30 days notice of any changes in designated representatives.

Designated representatives shall not have authority to make binding funding commitments on behalf of their Party. On all other issues, designated representatives shall have only the authority expressly granted in written instructions provided by their Party to each other Party.

5. MEETINGS - Following the development and adoption of the Management Plan, the designated representatives of all Parties shall meet at least semi-annually. At least one meeting per year will be dedicated to the development and approval of annual work plans for Preserve management. Other meetings will be scheduled on an "as needed" basis. The Preserve Manager (as defined in Paragraph 8 below) shall convene meetings of the Parties and shall preside at all such meetings.

6. COOPERATIVE ADMINISTRATIVE PROCESS - The Parties agree to coordinate policy decisions jointly. The cooperative administration process shall not be construed, however, to prohibit or restrain any Party from conducting its own business or internal planning on the portions of the Preserve which they own in fee title.

A. **Changes**: Major policy or other changes to this Agreement will be made by amendment as herein provided in Paragraph 18 below. Changes that require amendment to this Agreement include, without limitation:

(a) Amendment of Figure 1 to incorporate into the Preserve property to which any Party acquires fee title or a lesser interest after the date of this Agreement.

(b) Addition of new parties to this Agreement and amendment of Figure 1 to incorporate such new Party's property in the Preserve, provided the new party signs the provisions of this Agreement as so amended.

B. **Project Planning and Implementation**: The Parties agree to cooperate in project planning and implementation, to the extent possible, consistent with each Party's statutory and regulatory responsibilities. Because the appropriate regulatory

agencies with responsibility for the protection of rare species and plant communities at the county, state, and federal levels are all Parties to this Agreement, there is the potential for an efficient process that complies with all relevant regulatory statutes such as the California Endangered Species Act, Federal Endangered Species Act, California Environmental Quality Act, and National Environmental Policy Act.

The Parties will keep one another informed of major new developments as they occur. Activities recommended for discussion and cooperation include, but are not limited to, the following:

(a) Any action that might have a significant positive or adverse impact, directly or indirectly, upon any of the five plants listed as endangered or threatened under the state and federal Endangered Species Acts, listed in Section 2.A. of this Agreement.

(b) Actions that have an impact on public access and public use of Preserve lands.

(c) Development of conceptual designs for facilities, infrastructure, management or restoration at the Preserve. New or additional management needs, roles and responsibilities will be incorporated into the Management Plan on an annual basis.

(d) Development of strategies to fund or raise funds for the management of properties within the Preserve. In connection with each identified funding source, a lead Party shall be designated to prepare applications to that funding source and to administer funds.

(e) Review of mitigation project proposals and/or opportunities that might affect any or all Preserve lands.

(f) Review of applications for any permits or approvals required to carry out the provisions of this Agreement or of the Management Plan. Nothing in this provision shall be deemed to supersede the statutory or regulatory authority of any party to make decisions with regard to permits or approvals.

C. **Reports**: All Parties will cooperate in the preparation of an Annual Work Plan and report of activities and accomplishments coordinated by the Preserve Manager.

D. **Unanticipated Action; Meetings; Informal Notice**: Every Party shall be given the opportunity to review and comment on any major new action proposed to be undertaken by any of the Parties on the Preserve that is not explicitly provided for in the Management Plan or an Annual Work Plan. If this review and comment cannot

be accomplished at a regular meeting of the Parties, the Party proposing the action shall give written or oral notice of the proposed action to the administrative representatives of the other Parties at least 30 days before taking the proposed action. For actions that may impact state or federally listed species, the time frames for notification to the regulatory agencies remain those specified by law and regulation.

E. **Emergencies**: The procedure specified in Subparagraph D above does not apply to any emergency in which there exists, or is believed to exist, a threatened or actual loss of habitat values, structures or facilities on the Preserve or on adjacent lands, or a threat to public or employee safety on the Preserve or on adjacent lands. In the event of such an emergency, the Party best situated to respond may take such action as is consistent with the goals of, and the protection provided by, this Agreement and the Management Plan. The responding Party shall give notice thereof to the other Parties by any practicable means as soon as possible, before, during or after initiating response to the emergency.

7. ANNUAL WORK PLAN - When the Management Plan is completed, the Parties shall adopt Annual Work Plans setting forth the particular activities needed to carry out the Management Plan. The Annual Work Plan may also assign nonrecurring responsibility to one or more of the Parties accepting responsibility for carrying out particular activities. Subject to available funding, responsible Parties shall provide the resources and staffing necessary to complete the tasks they have agreed to accomplish under the Annual Work Plan.

8. PRESERVE MANAGER - A Preserve Manager will be chosen who has primary responsibility for the oversight of the Parties' activities which affect vegetation, wildlife and other natural resource values on the Preserve. This position will be responsible for coordinating and administering all activities on the Preserve, including burning, ecological restoration, research, monitoring, and public use. The Preserve Manager will be responsible for convening and presiding at meetings of administrative representatives. The Preserve Manager will coordinate the preparation of the Management Plan and amendments to the Management Plan, as well as Annual Work Plans and annual reports.

9. BLM'S PARTICIPATION - BLM manages substantial portions of the Salmon Falls and Cameron Park units of the Preserve, as well as the core properties of the Martel Creek and Penny Lane satellite preserve units, and 40 acres in the Pine Hill unit. BLM lands in the Preserve support five plant species listed under the federal Endangered Species Act of 1973. As a federal agency, BLM is mandated to further the purposes of the Endangered Species Act. Purposes of the act include the conservation of listed species, and the recovery of those species. Subject to the availability of appropriated

funds and compliance with all regulatory and statutory requirements, BLM agrees to implement the following tasks:

A. Management planning - Provide botanical and fire expertise for the planning process. Provide botanist to participate in inventory and monitoring of rare plant populations.

B. Fuels management - Provide heavy equipment services for mechanical fuels treatments and for preparations for burning. Provide a fire specialist and equipment for prescribed burns.

C. Special management designation - Designate the BLM lands included in the Preserve an Area of Critical Environmental Concern.

D. Research - Participate in setting priorities, designing and evaluating proposed research to address issues critical to Preserve management. Pursue funding opportunities available to federal agencies to promote research that furthers Preserve goals.

E. General management approach - Exercise its authority under Federal Land Policy and Management Act as manager of federally owned lands to preserve, protect and manage the unique natural ecosystems of the Preserve. Focus management on the conservation and recovery of the five species listed under the federal and state endangered species acts.

10. DFG's PARTICIPATION - The DFG manages portions of the Salmon Falls and Pine Hill units of the Preserve. These lands are known collectively as the Pine Hill Ecological Reserve (PHER). The lands were purchased or transferred to the State for the purpose of conserving the plant species that are the subject of this Management Plan. A management plan exists for the PHER lands that is compatible with the goals of this Agreement. Access to PHER (other than law enforcement officers, fire agencies, and DFG employees in the performance of their duties) requires written permission from DFG. Subject to the availability of appropriated funds and compliance with all regulatory and statutory requirements, DFG agrees to implement the following tasks:

A. Oversight - Retain oversight authority of management activities on the PHER conducted by the Preserve Manager (defined in Section 8 of this Agreement). Only activities approved in writing by DFG may be conducted on PHER.

B. Management - Conduct, in its discretion, management activities on the PHER for the conservation and enhancement of the rare plant species that are consistent with the Agreement, the overall Management Plan and Annual Work Plans. DFG will coordinate management efforts with the Preserve Manager and the

Management Agreement Administrators (defined in Section 4 of this Agreement).

C. PHER - Finalize a draft update to the PHER management plan and ensure that it is compatible with this Agreement and the overall Management Plan.

D. Consultation - Provide consultation regarding compliance of Preserve activities with the California Environmental Quality Act and the California Endangered Species Act.

E. Resource Protection - Participate with other signatory agencies in patrol/resource protection, land management, research and interpretive activities throughout the Preserve to the extent feasible for available staff.

F. Funding - Participate with other signatory agencies in the development of proposals to obtain funds to complete the Preserve and implement the Management Plan.

G. Availability of Funds - Participation in this agreement shall not exceed that allowed by appropriated State funds, nor shall the DFG be required to provide for any costs at such time that the DFG is no longer a party to this Agreement.

11. EC's PARTICIPATION - El Dorado County shall exercise its authority via implementation of the adopted goals and policies of the General Plan and Zoning Ordinance with the intent of furthering the purposes of the Preserve. Subject to the availability of funds and compliance with all regulatory and statutory requirements, EC agrees to implement, at minimum, the following tasks:

A. Preserve Designation - Maintain the existing Ecological Preserve designation as an overlay on the General Plan Land Use Maps which delineates the five Pine Hill Ecological Preserve units.

B. Development Standards - Include in the County's Zoning Ordinance additional development standards applicable to parcels of land which are affected by the Ecological Preserve overlay.

C. Acquisition and Management - Participate in land and/or conservation easement acquisition and management in a manner consistent with the implementation strategies associated with the five Pine Hill Preserve units as included in the background report of the General Plan.

D. Funding - Fund a reasonable share of the total land acquisition cost and operations and maintenance cost as needed to implement the Pine Hill Preserve as authorized by adopted ordinances and fee resolutions.

E. General Plan Compliance - Use its discretionary review powers to ensure project compliance with applicable objectives and policies of the General Plan in a manner consistent with the Goals of this Cooperative Management Agreement.

F. Technical Support - Provide technical support in the form of staff expertise and/or GIS mapping.

G. Management - Participate in setting priorities, evaluating proposed research necessary to address matters critical to Preserve management.

H. INRMP- Strive to include the provisions of the Pine Hill Preserve Management Plan as a component of the Integrated Natural Resources Management Plan as authorized by the Board of Supervisors pursuant to General Plan policy 7.4.2.8.

12. USFWS's PARTICIPATION - USFWS does not own or manage any lands within the Preserve but is responsible for administering the federal Endangered Species Act. USFWS (Service) will participate in the implementation of the Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills, which includes the five listed plant species found in the Preserve and El Dorado mule-ears. Subject to the availability of appropriated funds and compliance with all regulatory and statutory requirements, USFWS agrees to implement the following tasks:

A. Technical Advice - Provide technical advice on implementation of all aspects of the recovery plan

B. Management Committee - Serve on the Preserve management committee

C. Research - Work with the other signatory agencies to set research priorities and to design and/or evaluate proposed research relevant to Preserve management or biology of the species covered in this agreement

D. Funding - Pursue funding opportunities available to federal agencies to further Preserve goals and work with other signatory agencies in development of proposals to obtain funds to complete and manage the Preserve

E. Public Awareness - Work with the other signatory agencies to enhance public awareness of the species and plant communities of the Pine Hill gabbro formation, the Preserve, and the recovery plan.

F. ESA Compliance - Provide technical advice or consultation necessary under section 7(a)(2) of the Endangered Species Act with regard to Preserve activities.

G. INRMP- Participate in the Integrated Natural Resource Management Plan process in El Dorado County.

13. CDF's PARTICIPATION - The CDF owns a portion of the Pine Hill Unit of the Preserve (approximately 80 acres) and agrees to manage the portion of the Preserve to protect and enhance rare plant species located on this parcel. Subject to the availability of appropriated funds and compliance with all regulatory and statutory requirements, CDF agrees to implement the following tasks:

A. Management planning - Review and approve all fire management projects prior to initiation of projects. CDF will evaluate impacts of fire related projects to adjacent properties as they relate to fire protection.

B. Fuels Management - Coordinate all fire related management activities through the Vegetation Management Program Coordinator. Through the Vegetation Management Program (VMP), CDF will provide prescribed fire expertise and equipment for prescribed fire projects. The VMP Coordinator, under the direction of the Pre-Fire Division and Operations Division in the Amador/ El Dorado Ranger Unit, will determine to what extent CDF resources will be activated or deployed.

14. EID's PARTICIPATION - The District has water main easements within the boundaries of the Cameron Park unit of the Pine Hill Preserve. The District has committed to access and maintenance of these easements to minimize the impacts on plants and habitat. These easements facilitate access to the preserve for fire management responsibilities. Subject to the availability of funds and compliance with all regulatory and statutory requirements, EID agrees to implement the following tasks:

A. HCP- Participation in the development of a County Habitat Conservation Plan (HCP) that will include the provisions of the Pine Hill Preserve Management Plan, when authorized by the El Dorado Irrigation District Board of Directors.

15. BOR's PARTICIPATION - The Bureau of Reclamation (Reclamation) acquired 29.23 acres of land for the construction of Folsom Dam & Reservoir (T.11N., R.9E., Section 31, MDBM). This parcel is located within the boundary of the Salmon Falls unit of the Pine Hill Preserve. Under the Central Valley Project Improvement Act (CVPIA), Reclamation and Fish and Wildlife Service have contributed $1.5 million dollars for land acquisitions for the Pine Hill Preserve. California State Parks and Recreation (Parks) is Reclamation's managing partner for the Folsom Lake State Recreation Area. Reclamation will coordinate with Parks in managing Reclamation lands within the Pine Hill Preserve in accordance with the approved Management Plan.

16. ARC's PARTICIPATION - The American River Conservancy has provided fund-raising, acquisition and educational services towards the purchase of substantial

portions of the Salmon Falls and Cameron Park units of the Pine Hill Preserve. Within the organization's fiscal and personnel constraints, the American River Conservancy hereby agrees to provide additional assistance as follows:

A. Management and acquisition funding - Provide fund-raising expertise in habitat acquisition and management funding.

B. Volunteer labor in Preserve management - Provide volunteer support in the management of Preserve lands.

C. Public education - Provide public education services such as guided field trips, traveling displays, public workshops and written materials.

16a. EDCWA'S PARTICIPATION - The El Dorado County Water Agency will maintain active participation at Pine Hill Preserve Management meetings. The Water Agency will continue to offer support in the protection, care and management of the Pine Hill Preserve lands.

17. REDUCED FUNDING - The Parties shall endeavor to obtain funds for carrying out as many provisions of this Agreement as feasible. However, the unavailability or reduced availability of funding from any one of the Parties shall not operate to suspend or terminate this Agreement. Whenever possible, the Parties shall reduce the scope of activities to adapt to changes in available funding, rather than terminate or suspend an activity. The parties recognize that the performance of each other Party under this Agreement may, from time to time, be unavoidably curtailed due to lack of funding. Funds shall be deemed available, if in the sole discretion of each of the respective Parties, they determine that funds are available. If activities must be suspended or terminated, priority shall be given to continuing habitat management.

18. AMENDMENT PROCESS - This Agreement may be amended, as necessary or desirable, by a written amendment approved by all of the Parties.

A. Any Party may propose an amendment by providing a written copy of the proposed amendment to the other Parties. No amendment shall become effective unless and until it has been approved in writing by all of the Parties.

B. Any oral or written understanding that is not incorporated in this Agreement by amendment shall be without force or effect to modify the terms hereof or thereof or be utilized for the purpose of interpreting any provision hereof or thereof.

19. APPLICABILITY OF STATE AND FEDERAL LAW - Notwithstanding any other provision herein, this Agreement is subject to, and shall not be interpreted to be inconsistent with, any requirement of the federal Endangered Species Act (16 U.S.C. Section 1531 et seq.) or any other applicable state or federal law or regulation.

20. LIABILITY - To the extent permitted by State law, including but not limited to Government Code section 895 et seq., and to the extent applicable, by Government Code section 14662.5, each non-federal Party to this Agreement shall defend, hold harmless, and release each and every other Party from any and all claims, losses, damages, and liability for damages of every name, kind and description, including attorneys' fees and costs incurred, brought for, or on account of, injuries to or death of any person, including but not limited to workers, other Parties' employees, and the public, or damage to property, or any economic or consequential losses, which are claimed to or in any way arise out of or are connected with the services, operations, or performance hereunder of the releasing Party, its officers, agents, employees, or independent contractors, regardless of the existence or degree of fault or negligence on the part of any Party, its officers, agents, employees, or independent contractors, except for the sole or active negligence of another Party, or as expressly prohibited by statute. Further, each non-federal Party that is named in a legal action with any other Party, its officers, agents, employees, or independent contractors based on allegations of such a claim, loss, damage or liability for damages shall cooperate in the defense of the other Party, its officers, agents, employees, and independent contractors, to the extent permitted by law and to the extent such cooperation does not interfere with the Party's own defense. As used throughout this paragraph, "officers" includes, but is not limited to, any person who is a member of a Party's governing body or who exercises executive responsibility.

The federal parties to this Agreement will cooperate, to the extent allowed by law, in the submission of claims pursuant to the Federal Tort Claims Act, against the United States or a third party for personal injury or property damage resulting from the negligent act or omission of any employee of the United States in the course of his or her employment arising under this Agreement. The federal parties to this Agreement will hold harmless the other parties to this Agreement, their respective officers, agents, and employees from and against any and all claims, demands, losses, damages, causes of action, suits, and liabilities of every kind for injury to or death of a person or for loss of or damage to any property, resulting from any negligent act or omission of any employee of the United States in the course of his employment under this Agreement. Upon request, and subject to the Department of Justice's responsibilities in the conduct of litigation, and to the extent the interests of the United States are not impeded or adversely affected, the federal parties agree to provide appropriate support to the other parties, consistent with the terms of this Agreement, in the other parties' defense of claims arising out of the adoption and implementation of this Agreement.

21. TERM OF THIS AGREEMENT - This Agreement shall become effective on the date the Parties hereto have executed it, and as to the State, upon approval of the California Department of General Services, and shall remain in effect until July 17, 2011. This Agreement may be renewed by written agreement for additional five year

periods until such time as all entities then a Party hereto decide to terminate this Agreement. Any Party may withdraw from this Agreement by delivery of a written notice of intent to withdraw at least sixty (60) days prior to the proposed withdrawal date. After the withdrawal date, the withdrawing Party shall have no further obligations under this Agreement except for those costs, if any, incurred prior to the withdrawal date and properly chargeable to the withdrawing Party. Withdrawal of any Party shall not terminate this Agreement as to the remaining Parties.

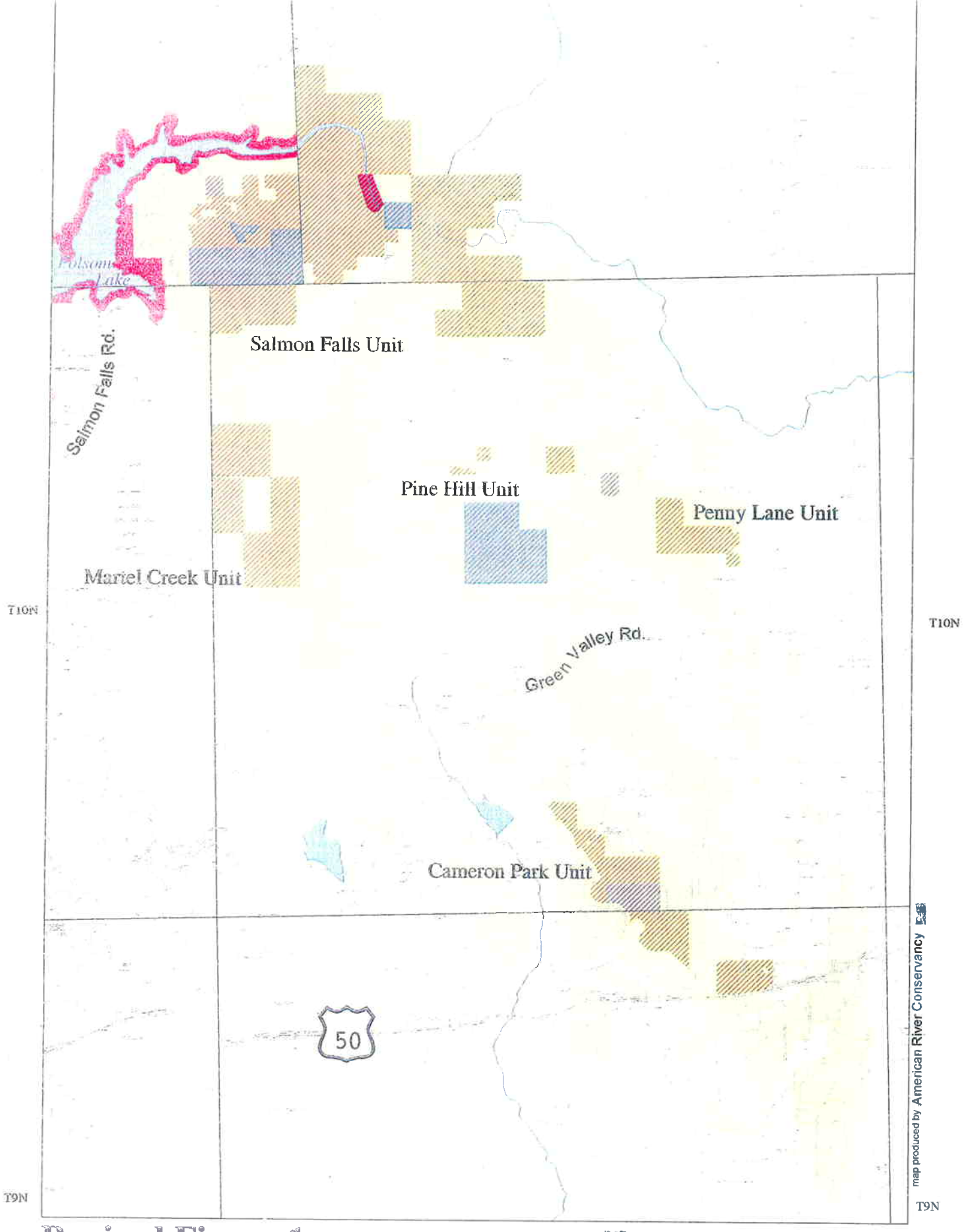
22. CONSISTENCY - In the event of any conflict between the primary and secondary goals stated in this Agreement and the terms of the Management Plan or any Annual Work Plan, this Agreement shall prevail.

23. EXECUTION - This Agreement is executed in eight (8) copies, each of which is to be considered an original.

24. AVAILABILITY OF FUNDS - Implementation of this Agreement by any Party shall be subject to the availability of funds to that Party.

25. ELECTED OFFICIALS NOT TO BENEFIT - No member of or delegate to the Congress or resident commissioner shall be entitled to any share or part of this Agreement, or to any benefit that may arise from it.

26. SEVERABILITY - If any provision of this Agreement is judicially determined or held to be invalid for any reason, that invalidity shall not, however, be imputed to any other provision of this Agreement that was not so determined or held to be invalid.



Revised Figure 1

amended 9/27/04

Pine Hill Preserve

Signature	Title	Date
	Field Manager	7/7/06

U.S. BUREAU OF LAND MANAGEMENT

Signature	Title	Date
	Regional Manager	7/17/06

CALIFORNIA DEPARTMENT OF FISH AND GAME

Signature	Title	Date
James R Sweeney	Chairman	9/12/06

EL DORADO COUNTY

Signature	Title	Date
	Asst. Field Supervisor	7/25/06

U.S. FISH AND WILDLIFE SERVICE

Signature	Title	Date

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Signature	Title	Date
for Ane Keister	Acting General Manager	9.28.06

EL DORADO IRRIGATION DISTRICT

IN WITNESS WHEREOF, the parties have caused this Cooperative Management Agreement for the Pine Hill Preserve, El Dorado County, to be duly executed.

Signature	Title	Date
U.S. BUREAU OF LAND MANAGEMENT		

Signature	Title	Date
CALIFORNIA DEPARTMENT OF FISH AND GAME		

Signature	Title	Date
EL DORADO COUNTY		

Signature	Title	Date
U.S. FISH AND WILDLIFE SERVICE		

Signature	Title	Date
Bill Holmes	UNIT CHIEF	7-19-06
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION		

Signature	Title	Date
EL DORADO IRRIGATION DISTRICT		

Signature	Title	Date
	AREA MANAGER	09/07/06

U.S. BUREAU OF RECLAMATION

Signature	Title	Date
	Exec. Director	07/11/06

AMERICAN RIVER CONSERVANCY

Signature	Title	Date
	GENERAL MANAGER	9/19/06

EL DORADO COUNTY WATER AGENCY

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
TREES	
Pinus ponderosa	Ponderosa Pine
Pinus Sabiniana	Gray Pine
Quercus douglasii	Blue Oak
Quercus kelloggii	California Black Oak
Quercus lobata	Valley Oak
Quercus wislizeni	Interior Live Oak
SHRUBS	
Adenostoma fasciculatum	Chamise
Aesculus californica	Buckeye
Arctostaphylos viscida	Whiteleaf Manzanita
Baccharis pilularis	Chaparral Broom
ssp. Consanguinea	
Ceanothus cuneatus	Buck-brush
Ceanothus Lemmonii	Lemmon's Buckbrush
Ceanothus roderickii	Pinehill Ceanothus
Cercis orbiculata	Redbud
Frangula californica ssp. tomentella	Coffeeberry
Fremontodendron californicum ssp. decumbens	Pine Hill Flannelbush
Haplopappus arborescens	Golden-fleece
Helianthemum scoparium	Rock Rose
Helianthemum suffrutescens	Bisbee Peak Rushrose
Heteromeles arbutifolia	Toyon
Mahonia dictyota	Barberry
Quercus dumosa	Scrub Oak
Quercus durata	Leather Oak
Rhamnus crocea ssp. ilicifolia	Redberry
Sambucus mexicana	Elderberry
Symphoricarpos albus var. laevigatus	Snowberry
Toxicodendron Deversilobum	Poison Oak
WOODY VINES	
Clematis lasiantha	Virgins-Bower
Lonicera hispidula var. vacillans	Honeysuckle
Lonicera interrupta	Chaparral Honeysuckle
Vitis californica	Wild Grape

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Aegilops triuncialis	Goatgrass
Aira caryophyllea	Hairgrass
Allium peninsulare	Peninsular Onion
Allium Sanbornii	Sanborn's Onion
Avena barbata	Slender Wild Oats
Avena fatua	Wild Oats
Brachypodium distachyon	Purple Falsebrome
Briza minor	Quaking Grass
Brodiaea elegans	Harvest Brodiaea
Brodiaea purdyi	Sierra Brodiaea
Bromus carinatus	Caliifornia Brome
Bromus diandrus	Ripgut Grass
Bromus hordeaceus ssp. hordeaceus	Soft Chess
Bromus laevipes	Brome Grass
Bromus madritensis	Brome Grass
Bromus rubens	Foxtail Chess
Bromus sterilis	Brome Grass
Bromus tectorum	Downy Brome
Calochortus albus	Fairy Lantern
Calochortus luteus	Yellow Mariposa
Calochortus monophyllus	Yellow Star-Tulip
Calochortus suberbus	Mariposa Lily
Carex brainerdii	Brainerd's Sedge
Carex Rossi	Ross' Sedge
Chlorogalum grandiflorum	Red Hills Soaproot
Chlorogalum pomeridianum	Common Soaproot
Cynosurus echinatus	Dogtail Grass
Danthonia californica var. america	Oatgrass
Deschampsia danthonioides	Annual Hairgrass
Dichelostemma capitatum ssp. capitatum	Blue Dicks
Dichelostemma congestum	Ookow
Dichelostemma multiflorum	Many-Flowered Brodiaea
Dichelostemma volubile	Twining Brodiaea
Elymus glaucus	Western Rye Grass
Erythronium multiscapoideum	Fawn Lily
Festuca Grayi	Eastwood Fescue

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Festuca megalura	Foxtail Fescue
Festuca Myuros	Rat's Tail Fescue
Festuca reflexa	Fescue
Fritillaria micrantha	Brown Bells
Gastridium ventricosum	Nit Grass
Hordeum depressum	Low Barley
Hordeum Hystrix	Mediterranean Barley
Hordeum leporinum	Leporinum Barley
Iris Hartwegii	Hartweg's Iris
Iris macrosiphon	Ground Iris
Juncus effuses var. pacificus	Bog Rush
Juncus tenuis	Rush
Koeleria macrantha	June Grass
Lolium multiflorum	Italian Ryegrass
Lolium temulentum	Darnel Cheat
Luzula comosa	Wood Rush
Melica californica	Melic Grass
Melica torreyana	Torrey Melic Grass
Oryzopsis miliacea	Smilo
Phalaris aquatica	Harding Grass
Piperia elegans ssp. elegans	Rein Orchis
Piperia unalascensis	Green Rein Orchis
Poa annua	Annual Bluegrass
Poa bulbosa	Bluegrass
Poa scabrella	Malpais Bluegrass
Polypogon monspeliensis	Beard Grass
Sisyrinchium bellum	Blue-Eyed Grass
Sitanion jubatum	Squirrel Tail Grass
Stipa Lemmonii	Lemmon's Needle Grass
Stipa lepida	Foothill Needlee Grass
Stipa pulchra	Purple Needle Grass
Taeniatherum caput-medusae	Wild Rye
Triteleia bridgesii	Bridges' Brodiaea
Triteleia hyacinthina	White Brodiaea
Triteleia ixioides ssp. ixioides	Golden Brodiaea
Triteleia laxa	Grass Nuts

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
HERBS - DICOTS	
Achillea millefolium var. californica	California Yarrow
Achillea millefolium var. occidentalis	Western Yarrow
Achyrachaena mollis	Blow-wives
Agoseris grandiflora	Grand Mountain Dandelion
Agoseris heterophylla	Annual Mountain Dandelion
Agoseris retrorsa	Spearleaf Mountain Dandelion
Allophyllum divaricatum	Purple False Gilyflower
Amsinckia intermedia	Common Fiddleneck
Amsinckia menziesii	Menzies' Fiddleneck
Ancistrocarphus filagineus	False Neststraw
Artemisia Douglasiana	Mugwort
Asclepias cordifolia	Milkweed
Aster chilensis	Aster
Aster radulinus	Broadleaf Aster
Astragalus Gambelianus	Locoweed
Athysanus pusillus	Common Sandweed
Balsamorhiza deltoidea	Basalm Root
Calandrinia ciliata var. menziesii	Red Maids
Calycadenia multiglandulosa	Rosin Weed
Calystegia occidentalis	Morning Glory
Calystegia purpurata ssp. Saxicola	Bindweed
Calystegia stebbinsii	Stebbins' Morning Glory
Capsella Bursa-pastoris	Shepherd's Purse
Cardamine oligosperma	Bittercress
Castilleja attenuatus	Valley Tassels
Castilleja foliolosa	Woolly Paintbrush
Castilleja lacerus	Cutleaf Indian Paintbrush
Catilleja subinclusa	Paintbrush
Centaurea melitensis	Tocalote
Centaurea solstitialis	Yellow Star-thistle
Centaurium muehlenbergii	Centaury
Cerastium glomeratum	Mouse-ear Chickweek
Chamaesyce ocellata	Contura Creek Sandmat
Chondrilla juncea	Skeleton Weed
Chorizanthe polygonoides	Knotweed Spineflower

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Cirsium Andersonii	Anderson's Thistle
Cirsium californicum	Sierra Thistle
Cirsium occidentale	Thistle
Cirsium vulgare	Bull Thistle
Clarkia biloba	Two-lobed Clarkia
Clarkia unguiculata	Elegant Clarkia
Claytonia exigua	Serpentine Springbeauty
Claytonia perfoliata	Miner's Lettuce
Claytonia perfoliata ssp. parviflora	Miner's Lettuce
Collinsia heterophylla	Chinese Houses
Collinsia sparsiflora var. Brucae	Blue-eye Marys
Comandra pallida	Bastard Toad-flax
Convolvulus arvensis	Bindweed
Croton setigerus	Turkey Mullein
Cryptantha muricata	Pointed Cryptantha
Cryptantha muricata var. denticulate	Pointed Catseye
Cuscuta Ceanothi	Canyon Dodder
Cuscuta occidentalis	Chaparral Dodder
Cynoglossum grande	Hound's Tongue
Daucus pusillus	Rattlesnake Weed
Delphinium Hanseni	Hansen's Larkspur
Delphinium patens	Zig Zag Larkspur
Dodecatheon Hansenii	Mosquito Bills, or Shooting Star
Dodecatheon Hendersonii	Mosquito Bills, Salior Caps
Emmenanthe penduliflora	Whispering Bells
Epilobium brachycarpum	Willow Herb
Erigeron foliosus	Fleabane Daisy
Erigeron philadelphicus	Skevish
Eriodictyon californicum	Yerba Santa
Erodium Botrys	Stork's Bill
Erodium brachycarpum	Blunt Folded Filaree
Erodium cicutarium	Redstem Filaree
Erodium moschatum	White-stem Filaree
Eschscholzia caespitosa	Tufted Poppy
Eschscholzia californica	California Poppy
Euphorbia crenulata	Chinese Caps
Euphorbia spathulata	Warty Spurge

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Evax acaulis	Stemless Dwarf-cudweed
Filago californica	California Cottonrose
Filago gallica	Narrowleaf Cottonrose
Galium divaricatum	Lamark's Bedstraw
Galium Aparine	Bedstraw
Galium Bolanderi	Bolander's Bedstraw
Galium californicum ssp. sierrae	El Dorado Bedstraw
Galium murale	Tiny Bedstraw
Galium parisiense	Wall Bedstraw
Galium porrigens var. tenue	Graceful Bedstraw
Gamochaeta pensylvanica	Pennsylvania everlasting
Geranium dissectum	Wild Geranium
Geranium molle	Cranesbill
Gilia capitata var. pedemontana	Baldhead
Githopsis pulchella	Largeflower Bluecup
Githopsis specularioides	Common Blue Cup
Gnaphalium palustre	Western Marsh Cudweed
Grindelia camporum	Gumweed
Helianthella californica var. nevadensis	Nevada Helianthella
Hemizonia fitchii	Fitch's Spikeweed
Hesperolinon micranthum	Smallflower Dwarf-flax
Hirschfeldia incana	Shortpod Mustard
Hoita macrostachya	Leather Root
Horkelia spp.	Five Finger
Hypericum concinnum	Gold-wire
Hypericum perforatum	Klamath Weed
Hypochoeris glabra	Smooth Cat's-Ear
Hypochoeris radicata	Rough Cat's-Ear
Keckiella breviflora ssp. breviflora	Bush Beard Tongue
Keckiella lemmonii	Lemmon's Keckiella
Lactuca serriola	Prickly Lettuce
Lamium amplexicaule	Henbit
Lasthenia californica ssp. californica	Goldfield
Lathyrus Jepsonii ssp. californicus	California Pea
Lathyrus latifolius	Perennial Sweet Pea
Lathyrus nevadensis	Sierra Pea
Lathyrus sulphureus	Sulphur Pea

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Leontodon taraxacoides ssp. taraxacoides	lesser hawkbit
Lepechinia calycina	Pitcher Sage
Lepidium nitidum	Peppergrass
Lepidium oblongum	Veiny Pepperweed
Leptosiphon bicolor	True Babystars
Leptosiphon ciliatus ssp. ciliatus	Whiskerbrush
Leptosiphon parviflorus	Variable Lianthus
Lessingia nemaclada	Slender-stemmed Lessingia
Linum bienne	Pale Flax
Lithophragma bolanderi	Bolander's Woodland Star
Lomatium macrocarpum	Bigseed Biscuitroot
Lomatium utriculatum	Common Lomatium
Lotus humistratus	Foothill Deervetch
Lotus micranthus	Lotus
Lotus purshianus	Bird's Foot Trefoil
Lotus scoparius	California Broom
Lotus subpinnatus	Yellow Annual Lotus
Lupinus albifrons	Bush Lupine
Lupinus bicolor	Miniature Lupine
Lupinus bicolor ssp. icrophyllus	Miniature Lupine
Lupinus latifolius ssp. latifolius	Broadleaf Lupine
Lupinus nanus	Sky Lupine
Lupinus polyphyllus	Bigleaf Lupine
Lupinus vallicola	Open Lupine
Madia elegans	Common Madia
Madia exigua	Small Tarweed
Madia gracilis	Grassy Tarweed
Madia minima	Dwarf Madia
Madia subspicata	Slender Tarweed
Matricaria matricarioides	Pineapple Weed
Medicago polymorpha	Bur-clover
Micropus calfornicus	Slender Cottonweed
Microseris heterocarpa	Grassland Silverpuffs
Microseris lindleyi	Lindley's Silverpuffs
Microsteris gracilis	Slender Phlox
Mimulus aurantiacus	Bush Monkey Flower
Mimulus cardinalis	Scarlet Monkey Flower

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Mimulus guttatus	Seep Monkey Flower
Mondarella villosa ssp villosa	Coyote Mint
Navarretia filicaulis	Thin-stemmed Navarretia
Navarretia viscidula	Sticky Pincushionplant
Nemophila heterophylla	Canyon Nemophila
Nemophila Menziesii	Baby Blue Eyes
Orobanche bulbosa	Chaparral Broomrape
Orobanche fasiciculata	Clustered Broomrape
Orobanche uniflora	Naked Broomrape
Packera layneae	Layne's Butterweed
Pectocarya pusilla	Little Pectocarya
Penstemon azureus	Azure Penstemon
Perideridia Gairdneri	Gairdner's Yampah
Perideridia Parishii	Parish's Yampah
Petrorhagia dubia	Wild Carnation
Phoradendron flavescens var. villosum	Oak Mistletoe
Picris echioides	Ox Tongue
Plagiobothrys fulvus var. campestris	Fulvous Popcornflower
Plagiobothrys nothofulvus	Rusty Popcornflower
Plantago erecta	Dotseed Plantain
Plantago lanceolata	English Plantain
Plectritis ciliosa	Long-spur Seablush
Plectritis macrocera	Plectritis
Pogogyne serpylloides	Thymeleaf Mesamint
Polygala cornuta	Sierra Milkwort
Polypodium californicum	California Polypody Fern
Potentilla glandulosa ssp. reflexa	Sticky Cinquefoil
Pseudognaphalium californicum	California Cudweed
Pseudognaphalium canescens ssp. beneolens	Wright's Cudweed
Psilocarphus brevissimus	Short Woollyheads
Ranunculus californicus	California Buttercup
Ranunculus muricatus	Spiny-fruit Buttercup
Ranunculus occidentalis	Western Buttercup
Rigiopappus leptocladus	Wireweed
Rumex acetosella	Sheep Sorrel
Rumex crispus	Curly Dock
Rumex pulcher	Fiddle Dock

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Salvia sonomensis	Sonoma Sage
Sanguisorba minor	Small Burnet
Sanicula bipinnata	Poison or Yellow Sanicle
Sanicula bipinnatifida	Purple Sanicle, Shoe Buttons
Sanicula crassicaulis	Common Sanicle
Sanicula tuberosa	Tuberous Sanicle
Satureja Douglasii	Yerba Buena
Saxifraga californica	California Saxifrage
Scandix Pecten-Veneris	Shepherd's Needle
Scutellaria californica	California Skullcap
Senecio aronicoides	Ragwort
Senecio vulgaris	Common Groundsel
Sidalcea hartwegii	Valley Checkerbloom
Sidalcea malvaeflora ssp. asprella	Checker Mallow
Silene gallica	Catchfly
Sisymbrium altissimum	Tumble or Jim Hill Mustard
Sisymbrium officinale	Hedge Mustard
Solanum xantii var inter-medium	Nightshade
Solidago californica	California Goldenrod
Soliva sessilis	South American Soliva
Sonchus asper	Prickly Sow Thistle
Sonchus oleraceus	Common Sow Thistle
Spergularia rubra	Sandspurry
Stellaria media	Common Chickweed
Stephanomeria virgata	Rod Wirelettuce
Thysanocarpus curvipes	Fringe Pod, Lace Pod
Torilis arvensis	Spreading Hedgeparsley
Torilis nodosa	Knotted Hedgeparsley
Trifolium albopurpureum	Rancheria Clover
Trifolium bifidum	Notchleaf Clover
Trifolium ciliolatum	Tree Clover
Trifolium depauperatum	Cowbag Clover
Trifolium dubium	Shamrock Clover
Trifolium gracilentum	Pinpoint Clover
Trifolium incarnatum	Crimson Clover
Trifolium microcephalum	Littlehead Clover
Trifolium pretense	Red Clover

Appendix 2. FLORA OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY	
Trifolium subterraneum	Subterraneum Clover
Trifolium variegatum	Whitetip Clover
Trifolium willdenowii	Tomcat Clover
Triphysaria erianthus	Johnny Tucks
Triphysaria pusillus	Dwarf Owl-clover
Vicia americana var. americana	American Vetch
Vicia sativa	Spring Vetch
Vicia villosa	Winter Vetch
Wyethia angustifolia	Narrowleaf Mule Ears
Wyethia Bolanderi	Bolander's Mule-ears
Wyethia reticulate	El Dorado Mule-ears
FERNS	
Adiantum Jordani	California Maiden-hair Fern
Aspidotis californica	California Lace Fern
Cheilanthes intertexta	Coastal Lip Fern
Pellaea mucronata	Bird's Foot Fern
Pentagramma triangularis ssp. triangularis	Golden-back Fern
Pteridium aquilinum	Bracken Fern
Woodwardia fimbriata	Chain Fern

Appendix 3. WILDLIFE OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY

Common Name	Scientific Name
MAMMALS	
Antrozous pallidus	Pallid Bat
Bassariscus astutus	Ringtail
Canis latrans	Coyote
Chaetodipus californicus	California Pocket Mouse
Didelphis virginiana	Virginia Opossum
Dipodomys californicus	California Kangaroo Rat
Eptesicus fuscus	Big brown bat
Erethizon dorsatum	Porcupine
Lasionycteris noctivagans	Silver-haired Bat
Lasiurus borealis	Red Bat
Lasiurus cinereus	Hoary Bat
Lepus californicus	Black-tailed Jackrabbit
Lynx rufus	Bobcat
Mephitis mephitis	Striped Skunk
Microtus californicus	California Vole
Mustela frenata	Long-tailed Weasel
Myotis californicus	California Myotis
Myotis evotis	Long-eared Myotis
Myotis leibii	Small-footed Myotis
Myotis volans	Long-legged Myotis
Myotis yumanensis	Yuma Myotis
Neotoma fuscipes	Dusky-footed Woodrat
Odocoileus hemionus	Black-tailed Deer
Peromyscus boylii	Brush Mouse
Peromyscus maniculatus	Deer Mouse
Peromyscus truei	Pinyon Mouse
Pipistrellus hesperus	Western Pipistrelle
Plecotus townsendii	Townsend's Big-eared Bat
Procyon lotor	Raccoon
Puma Concolor	Mountain Lion
Reithrodontomys megalotis	Western Harvest Mouse
Scapanus latimanus	Broad-footed Mole
Sciurus griseus	Western Gray Squirrel
Silvilagus Audubonii	Desert Cottontail
Sorex ornatus	Ornate Shrew
Spermophilus beecheyi	California Ground Squirrel
Spilogale gracilis	Western Spotted Skunk
Sylvilagus bachmani	Brush Rabbit

Appendix 3. WILDLIFE OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY

Tadarida brasiliensis	Brazilian Free-tailed Bat
Taxidea taxus	Badger
Thomomys bottae	Botta's Pocket Gopher
Urocyon Cinereoargenteus	Common Gray Fox
Ursus americanus	Black Bear
BIRDS	
Accipiter cooperii	Cooper's Hawk
Accipiter striatus	Sharp-shinned Hawk
Actitis macularius	Spotted Sandpiper
Aechmophorus occidentalis	Western Grebe
Aeronautes saxatalis	White-throated Swift
Agelaius phoeniceus	Red-winged Blackbird
Aimophila ruficeps	Rufous-crowned Sparrow
Ammodramus savannarum	Grasshopper Sparrow
Amphispiza belli	Sage Sparrow
Anas Acuta	Northern Pintail
Anas americana	American Wigeon
Anas clypeata	Northern Shoveler
Anas crecca	Green-winged Teal
Anas cyanoptera	Cinnamon Teal
Anas platyrhynchos	Mallard
Anser caerulescens	Snow Goose
Anthus spinoletta	Water Pipet
Aphelocoma californica	Western Scrub-jay
Aquila chrysaetos	Golden Eagle
Archilochus alexandri	Black-chinned Hummingbird
Ardea alba	Great Egret
Ardea herodias	Great Blue Heron
Asio flammeus	Short-eared Owl
Asio otus	Long-eared Owl
Athene cunicularia	Burrowing Owl
Aythya collaris	Ring-necked Duck
Bombycilla cedrorum	Cedar Waxwing
Branta canadensis	Canada Goose
Bubo virginianus	Great Horned Owl
Buteo jamaicensis	Red-tailed Hawk
Buteo swainsoni	Swainson's Hawk
Callifpepla Californicus	Valley Quail
Callipepla californica	California Quail
Calypte anna	Anna's Hummingbird
Cardeulis psaltria	Lesser Goldfinch
Carduelis lawrencei	Lawrence's Goldfinch

Appendix 3. WILDLIFE OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY

Carduelis tristis	American Goldfinch
Carpodacus mexicanus	House Finch
Carpodacus purpureus	Purple Finch
Cathartes aura	Turkey Vulture
Catharus guttatus	Hermit Thrush
Chaetura vauxi	Vaux's Swift
Chamaea fasciata	Wrentit
Charadrius vociferus	Killdeer
Chondestes grammacus	Lark Sparrow
Chordeiles minor	Common Nighthawk
Circus cyaneus	Marsh Hawk
Circus cyaneus	Northern Harrier
Colaptes auratus	Common Flicker
Colaptes auratus	Northern Flicker
Columba fasciata	Band-tailed Pigeon
Corvus brachyrhynchos	American Crow
Cygnus columbianus	Tundra Swan
Cypseloides niger	Black Swift
Dendroica coronata	Yellow-rumped Warbler
Dendroica nigrescens	Black-throated Gray Warbler
Dendroica occidentalis	Hermit Warbler
Dendroica petechia	Yellow Warbler
Dendroica townsendi	Townsend's Warbler
Empidonax difficilis	Pacific-slope Flycatcher
Empidonax hammondii	Hammond's Flycatcher
Euphagus cyanocephalus	Brewer's Blackbird
Falco columbarius	Merlin
Falco mexicanus	Prairie Falcon
Falco peregrinus	Peregrine Falcon
Falco sparverius	American Kestrel
Fulica americana	American Coot
Gallinago gallinago	Common Snipe
Geococcyx californianus	Roadrunner
Geothlypis trichas	Common Yellowthroat
Glaucidium gnoma	Pygmy Owl
Haliaeetus leucocephalus	Bald Eagle
Hesperiphona vespertina	Evening Grosbeak
Icterus galbula	Northern Oriole
Ixoreus naevius	Varied Thrush
Junco hyemalis	Dark-eyed Junco
Lanius ludovicianus	Loggerhead Shrike
Larus californicus	California Gull

Appendix 3. WILDLIFE OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY

Larus delawarensis	Ring-billed Gull
Megaceryle alcyon	Belted Kingfisher
Megascops kennicottii	Screech Owl
Melanerpes formicivorus	Acorn Woodpecker
Melanerpes lewis	Lewis' Woodpecker
Meleagris gallopavo	Wild Turkey
Mergus merganser	Common Merganser
Mimus polyglottos	Northern Mockingbird
Molothrus ater	Brown-headed Cowbird
Myadestes townsendi	Townsend's Solitaire
Myiarchus cinerascens	Ash-throated Flycatcher
Myiarchus tuberculifer	Dusky Flycatcher
Nycticorax nycticorax	Black-crowned Night Heron
Oporornis tolmiei	MacGillivray's Warbler
Oreortyx pictus	Mountain Quail
Oxyura jamaicensis	Ruddy Duck
Pandion haliaetus	Osprey
Parus inornatus	Oak Titmouse
Passer domesticus	House Sparrow
Passerculus sandwichensis	Savannah Sparrow
Passerella iliaca	Fox Sparrow
Passerina amoena	Lazuli Bunting
Petrochelidon pyrrhonota	Cliff Swallow
Phainopepla nitens	Phainopepla
Phalaenoptilus	Poorwills
Phalaropus tricolor	Wilson's Phalarope
Pheucticus melanocephalus	Black-headed Grosbeak
Pica nuttalli	Yellow-billed Magpie
Picoides nuttallii	Nuttall's Woodpecker
Pipilo chlorurus	Green-tailed Towhee
Pipilo crissalis	California Towhee
Pipilo maculatus	Spotted Towhee
Podiceps nigricollis	Eared Grebe
Podilymbus podiceps	Pied-billed Grebe
Polioptila caerulea	Blue-gray Gnatcatcher
Pooecetes gramineus	Vesper Sparrow
Psaltriparus minimus	Bushtit
Rallus limicola	Virginia Rail
Recurvirostra americana	American Avocet
Regulus calendula	Ruby-crowned Kinglet
Sayornis nigricans	Black Phoebe
Sayornis saya	Say's Phoebe

Appendix 3. WILDLIFE OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY

Selasphorus rufus	Rufous Hummingbird
Selasphorus sasin	Allen's Hummingbird
Sialia mexicana	Western Bluebird
Sitta carolinensis	White-breasted Nuthatch
Spizella atrogularis	Black-chinned Sparrow
Spizella passerina	Chipping Sparrow
Spizelli breweri	Brewer's Sparrow
Stellula calliope	Calliope Hummingbird
Sturnella neglecta	Western Meadowlark
Sturnus	Starling
Sturnus vulgaris	European Starling
Tachycineta bicolor	Tree Swallow
Thryomanes bewickii	Bewick's Wren
Toxostoma redivivum	California Thrasher
Troglodytes aedon	House Wren
Turdus migratorius	American Robin
Tyrannus verticalus	Western Kingbird
Tyto alba	Barn Owl
Vermivora celata	Orange-crowned Warbler
Vermivora ruficapilla	Nashville Warbler
Vireo cassinii	Cassin's Vireo
Vireo gilvus	Warbling Vireo
Vireo huttoni	Hutton's Vireo
Wilsonia pusilla	Wilson's Warbler
Xanthocephalus xanthocephalus	Yellow-headed Blackbird
Zenaida macroura	Mourning Dove
Zonotrichia atricapilla	Golden-crowned Sparrow
Zonotrichia leucophrys	White-crowned Sparrow
FISH	
Ameiurus nebulosus	Brown Bullhead
Cottus gulosus	Riffle Sculpin
Cyprinus carpio	Common Carp
Lavinia exilicauda	Hitch
Lepomis macrochirus	Bluegill
Micropterus dolomieu	Smallmouth Bass
Micropterus salmoides	Largemouth Bass
Mylopharodon conocephalus	Hardhead
Oncorhynchus mykiss	Rainbow Trout/Steelhead
Oncorhynchus mykiss	Rainbow Trout/Steelhead
Pogonichthys macrolepidotus	Sacramento Splittail
Ptychocheilus grandis	Sacramento Squawfish
Salvelinus fontinalis	Brook Trout

Appendix 3. WILDLIFE OF THE PINEHILL PRESERVE AND SURROUNDING VICINITY

AMPHIBIANS	
Aneides lugubris	Arboreal Salamander
Batrachoseps attenuatus	California Slender Salamander
Bufo boreas	Western Toad
Emys marmorata	Western Pond Turtle
Ensatina eschscholtzii	Ensatina
Hyla regilla	Pacific Treefrog
Rana aurora	Red-legged Frog
Rana boylii	Foothill Yellow-Legged Frog
Rana catesbeiana	Bullfrog
Taricha torosa	California Newt
REPTILES	
Charina bottae	Rubber Boa
Cnemidophorus tigris	Western Whiptail
Coluber constrictor	Racer
Contia tenuis	Sharp-Tailed Snake
Crotalus viridis	Western Rattlesnake
Diadophis punctatus	Ringneck Snake
Elgaria multicarinata	Southern Alligator Lizard
Eumeces gilberti	Gilbert's Skink
Eumeces skiltonianus	Western Skink
Hypsiglena torquata	Night Snake
Lampropeltis getula	Common Kingsnake
Lampropeltis zonata	California Mountain Kingsnake
Masticophis lateralis	California Whipsnake (Striped Racer)
Pituophis catenifer	Gopher Snake
Sceloporus occidentalis	Western Fence Lizard
Thamnophis couchii	Sierra (Western Aquatic) Garter Snake
Thamnophis sirtalis	Common Garter Snake
Phrynosoma coronatum	California Horned Lizard

PAR
Habitat Planning In Perpetuity
The Property Analysis Record

Title	Pine Hill Preserve 2007
Dataset	LA001
ID	PHP_PAR3
Prepared by	Graciela Hinshaw
Date	10/15/2007

Property Analysis Record Ver. 2.07.e 10/23/2003 (C) 1999 - 2003 Center for Natural Lands
425 E. Alvarado St., Suite H, Fallbrook, CA 92028-2960

U.S.G.S.Quad 1:	Pilot Hill	U.S.G.S.Quad 2: Coloma
U.S.G.S.Quad 3:	Clarksville	U.S.G.S.Quad 4: Shingle Springs
Management type:	Ownership	
Prepared by	Graciela Hinshaw	
Date	10/15/2007	
Address	63 Natoma Street	
City, State, Zip	Folsom, CA 95630	
Phone	(916) 985-4474	
Location/Jurisdiction	BLM Folsom Office	
County	El Dorado	
Acres	4042	

Project Status	Start Date	Completion	Status/Notes
Construction	08/30/2006	09/01/2011	Ongoing, review 5yr
Restoration	08/30/2006	09/01/2011	Ongoing, review 5yr
Stewardship	08/30/2006	09/01/2011	Ongoing, review 5yr

	Owner	Proponent
Name	Graciela Hinshaw	
Organization	Pine Hill Preserve	
Address	63 Natoma Street	
City, State, Zip	Folsom, CA 95758	
Phone	(916) 985-4474	
Fax	(916) 985-3259	
E-Mail address	Graciela_Hinshaw@blm.gov	

	Consultant #1	Consultant #2
Name		
Organization		
Address		
City, State, Zip		
Phone		
Fax		
E-Mail address		
Specialty		

Cost Year	2007	
Date of site visit:	08/30/2006	
Development Project		
Name	PINE HILL PRESERVE	
Acres	4,042	
Stage of planning	Ongoing-perpetuity	
Conserved acres	4,,42	
Mitigation Bank		
Log	No	MBCR: 0
Credit basis		
Stage of planning		

Notes

The Pine Hill Preserve is a 4042-acre Preserve in western El Dorado County. The Preserve's mission is to protect in perpetuity the rare plants of the western El Dorado County gabbro soil formation. Eigh rare plant species and their habitats are the conservation targets for this proect. The eight rare plant species are Stebbin's morning-glory, Pine Hil ceanothus, El Dorado bedstraw, Pine Hill flannelbush, Layne's butterweed, Red Hills soaproot, Bisbee Peak rush-rose and El Dorado mule-ears. These species occur over three different habitat types (northern mixed chaparral, oak/pine woodland and grassland) within the Preserve. Main threats to the rare plants are habitat loss and the alteration of favorabel fire regimes for the rare plants. Main management issues include land protection, restoration of favorable fire regimes, Preserve patrollig and monitoring habitat and species, conduct habitat restoration and research, and conduct education and outreach activities. The Pine Hill Preserve steering committee is formed by nine federal, State and local agencies and one private non-profit organization.

Section 2 - Contacts

Property Title: Pine Hill Preserve 2007 Dataset: LA001 PAR ID: PHP_PA 10/17/2007

Relation	(1) CMA Signatory	Phone	
Name	(1)	Fax	
Street		E-mail	
Organization			
City, State & Zip			

Relation	(2) CMA Representant	Phone	
Name	(2)	Fax	
Street		E-mail	
Organization			
City, State & Zip			

Relation	Executive Director	Phone	(530) 621-1224
Name	Alan Erghott (1,2)	Fax	(530) 621-4818
Street	8913 Highway 49	E-mail	ehrgott@arconservancy.org
Organization	American River Conservancy		
City, State & Zip	Coloma, CA 95613		

Relation	Branch Chief	Phone	(916) 414-6600
Name	Amy Fesnock2)	Fax	(916) 414- 6713
Street	2800 Cottage Way	E-mail	Amy_Fesnock@fws.gov
Organization	US Fish and Willdlife Service		
City, State & Zip	Sacramento, Ca 95825		

Relation	General Manager	Phone	(530) 622-4513
Name	Ann Deister (1)	Fax	(530) 622 1195
Street	2890 Mosquito Road	E-mail	admin@eid.org
Organization	El Dorado Irrigation District		
City, State & Zip	Placerville, CA 95667		

Relation	Unit Representative	Phone	(530) 644-2345
Name	Bill Holmes (1)	Fax	
Street	2840 Mt. Danaher Road	E-mail	Bill.Holmes@fire.ca.gov
Organization	Cal. Dep. of Fire and Forestry		
City, State & Zip	Camino, CA 95709		

Relation	Env. Specialist	Phone	(916) 988-1707
Name	Brian Deason	Fax	(916) 989-7208
Street	7794 Folsom Dam Road	E-mail	BDEASON@mp.usbr.gov
Organization	Bureau of Reclamation		
City, State & Zip	Folsom, CA 95630		

Relation	Assistant Field Supe	Phone	(916) 414-6600
Name	Cay Goude (1)	Fax	(916) 414-6713
Street	2800 Cottage Way, W-265	E-mail	Cay_Goude@fws.gov
Organization	US Fish and Wildlife Service		
City, State & Zip	Sacramento, CA 95825		

Relation	El Dorado Unit	Phone	530-644-2345
Name	Chris Watters (2)	Fax	
Street	2840 Mt. Danaher Road	E-mail	Chris.Waters@fire.ca.gov
Organization	Cal. Dep. of Fire and Forestry		
City, State & Zip	Camino, CA 95709		
Relation		Phone	(530) 622-4513
Name	David Witter (2)	Fax	(530) 622 1195
Street	2890 Mosquito Road	E-mail	dwitter@eid.org
Organization	El Dorado Irrigation District		
City, State & Zip	Placerville CA 95667		
Relation	Preserve Manager	Phone	(916) 985-4474
Name	Graciela Hinshaw (2)	Fax	(916) 985-3259
Street	63 Natoma St.	E-mail	Graciela_Hinshawh@blm.gov
Organization	Pine Hill Preserve		
City, State & Zip	Folsom, CA 95630		
Relation	Chairman	Phone	
Name	Jack Sweeney(1)	Fax	
Street	330 Fair Lane	E-mail	
Organization	EDC Board of Supervisors		
City, State & Zip	Placerville, CA 95667		
Relation	Biologist	Phone	(916) 358-2900
Name	Jason Holley (2)	Fax	(916) 358-2912
Street	1701 Nimbus Road	E-mail	jholley@dfg.ca.gov
Organization	Cal. Dep. of Fish and Game		
City, State & Zip	Rancho Cordova, CA 95670		
Relation	Biologist	Phone	(916) 414-6600
Name	Jeremiah Karuzaz (2))	Fax	(916) 414- 6713
Street	2800 Cottage Way	E-mail	Jeremiah_Karuzas@fws.gov
Organization	US Fish and Willdlife Service		
City, State & Zip	Sacramento, CA 95825		
Relation	Area Manager-central	Phone	(916) 989-7200
Name	Michael Finnegan (1)	Fax	(916) 989-7208
Street	7794 Folsom Dam Road	E-mail	MFINNEGAN@mp.usbr.gov
Organization	Bureau of Reclamation		
City, State & Zip	Folsom, CA 95630		
Relation	Principal Planner	Phone	(530) 621-5761
Name	Peter Maurer(2)	Fax	(530) 642-0508
Street	330 Fair Lane	E-mail	pmaurert@co.el-dorado.ca.us
Organization	EDC Planning Department		
City, State & Zip	Placerville, CA 95667		

Relation	Regional Manager	Phone	(916) 358-2900
Name	Sandra Morey (1)	Fax	(916) 358-2912
Street	1701 Nimbus Road	E-mail	
Organization	Ca. Dep. of Fish and Game		
City, State & Zip	Rancho Cordova, CA 95670		

Relation		Phone	(530) 621-6678
Name	Tami Scowcroft (2)	Fax	
Street	3932 Ponderosa Road, Suite 200	E-mail	tami.scowcroft@co.el-dorado.ca
Organization	EDC Water Agency		
City, State & Zip	Shingle Springs, CA 95682		

Relation	Biologist	Phone	(209) 745-1968
Name	Todd Gardner (2)	Fax	(916) 358-2912
Street	1701 Nimbus Road	E-mail	tgardner@dfg.ca.gov
Organization	Cal. Dep.of Fish and Game		
City, State & Zip	Rancho Cordova, CA 95670		

Relation	Field Office Manager	Phone	(916) 985-4474
Name	William Haigh (1)	Fax	(916) 985-3259
Street	63 Natoma St.	E-mail	William_Haigh@blm.gov
Organization	Bureau of Land Management		
City, State & Zip	Folsom, CA 95630		

Relation	General Manager	Phone	
Name	William Hethland (1)	Fax	
Street	3932 Ponderosa Road, Suite 200	E-mail	
Organization	EDC Water Agency		
City, State & Zip	Shingle Springs, CA 95682		

Purposes for Preservation	Goals and Objectives
- PURPOSES FOR PRESERVATION	The mission of the Pine Hill Preserve is to protect in perpetuity the rare plants of the gabbro soil formation in western El Dorado County.
Open Space	Yes, the Pine Hill Preserve provides open space for the communities of Cameron Park, Shingle Spring, Rescue, Folsom, Salmon Falls and other in western El Dorado County and east Sacramento County.
Passive Recreation	Yes, this is the main use of the Preserve by the public. recreational activities include hiking and nature watching.
Endangered Species	Contributing to the conservation and recovery of five State and/or listed plant species.
Watershed Protection	Yes, through the protection of several creeks and a portion of the Southern Fork of the American River.
Wildlife Corridor	Yes, by protecting habitat for wildlife and creating connectivity among remaining patches of natural habitat.
Erosion Control	Yes, by protecting and managing habitat and by conduction erosion control activities.
Hunting	Yes, in the BLM owned areas within the Preserve. Those areas are subject to the State of California hunting regulations. When hunters inquire about hunting in the Preserve, information about access restrictions and noise/safety concerns for neighbors living next to Preserve lands is provided. Rifle hunting within the Preserve is discouraged when possible.
Other	Research, education and outreach, development mitigation.

Section 4 - Documents and References

Property Title: Pine Hill Preserve 2007 Dataset: LA001 PAR ID: PHP_PAR3 10/17/2007

	Document & Reference	Contact	Phone/Fax/Email	Date Rcv'd
0	Aerial Photographs	BLM GIS files		10/04/2005
0	Biotic Assessments and Maps	Reports, thesis, etc.		10/10/2005
0	General Development Plan	El Dorado County Planning		04/01/2006
0	Homeowners Association Doc.	BLM files		10/04/2005
0	Improvement Maps	BLM Archives and GIS directory		10/04/2005
0	Mgmt.Implementation Agreements	Pine Hill Preserve files		10/04/2005
0	Photographs	BLM files and Internet documen		08/01/2006
0	Title Report with Survey Map	BLM arcives and files		10/04/2005
0	Other	Books, Internet sites		01/01/2006

Permits

Agency Permit	Army Corp of Engineers 404		
Permit Purpose	No		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments			

Agency Permit	BOR Floodplain Permit		
Permit Purpose	No		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments			

Agency Permit	Building Permit		
Permit Purpose	No		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments			

Agency Permit	Burning Permit		
Permit Purpose	Yes		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments	When burning activities are conducted at the Preserve, the appropriate permits will be requested		

Permits

Agency Permit	State Dept. of Fish and Game		
Permit Purpose	Yes		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments	Will coordinate for activities in State lands or realted to State listed plants		

Agency Permit	State Dept. Environ. Quality		
Permit Purpose	No		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments			

Agency Permit	State Dept. of Resources		
Permit Purpose	No		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments			

Agency Permit	County Requirement		
Permit Purpose	Yes		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments	Will coordinate with County for activities in County owned lands		

Permits

Agency Permit	City Requirement		
Permit Purpose	No		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments			

Agency Permit	HCP/NCCP Agreement		
Permit Purpose	Yes		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments	Once the County's INRMP is in place, the Preserve will coordinate conservation efforts		

Agency Permit	Mitigation Bank Implementation		
Permit Purpose	Yes		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments	Preserve is not a Bank, bu it serves as a mitigation mechanism, will coordinate when needed		

Agency Permit	US Fish and Wildlife Section 7		
Permit Purpose	Yes		
Date	/ /		
Issued	No	Reporting	No
Standards	No	Restoration	No
PAR	No	Monitoring	No
When Scheduled			
Monitoring Schedule			
Standards for Success			
Comments	Will coordinate with FWS for activities involving federally listed plants		

Contract Requirements

Item	Requirement	Requirement
Management Agreements		Pine Hill Preserve Coordination Management Agreement

Division of Responsibilities

Item	Type	Notes
Debris Removal	M	
Erosion Control	M	
Fences	M	
Fire Suppression	A	
Fire Zone/Buffer Management	A	
Interpretative Program	M	
Maintenance, Building/Office	A	
Maintenance, Road	M	
Monitoring, Plant	M	
Monitoring, Wildlife	M	
Patrolling	M	
Prescriptive Burning	A	
Signs, Access Control	M	
Signs, Entrance	M	
Signs, Interpretive	M	
Trails, Biking	M	
Trails, Hiking	M	
Trash Collection, Initial	M	
Trash Collection, Ongoing	M	
Other	O	Management coordinates PHP partners and volunteers helping with management tasks

Physical / Legal

Item	Description	Notes
Existing Structures	None	
Fire Breaks	Line break	about 0.7 miles in Cameron Park unit
Property Line Marked	Partially	
Trails	Limited	

Property Uses Item	Permitted/ Legal	Problem	Notes
Access Points	Y	Medium	Access to the different Preserve units is very limited. Need more access.
Agricultural	N	None	
Equestrian	Y	Low	This use is low and allowed, may become an elevated problem if intensifies
Fishing	N	None	
Hiking Trails	Y	Low	High use of trails, ocassional trash dumping and need for erosion control
Livestock Grazing	N	None	
Mountain Bikes	Y	Low	Yes use is low and allowed, may become an elevated problem if use intensifies
Oil/Mineral Extract.	Y	Medium	Access to mine claims a problem, also potential habitat deterotiation by use
ORV	Y	High	Use of ORV is currently suspended, due to access and erosion problems.
Passive Recreation	Y	None	Include native plants sighting, birdwatching, photography.
Roads	Y	Medium	Some need erosion control, other need some barriers
Shooting/Hunting	Y	Medium	Use almost non-existent, can be a problem because of houses adjacent to PHP
Snowmobiles	N	None	
Timber Harvest	N	None	
Other	Y	None	Research, education and outreach are conducted at the PHP.

Adjacent Land Use Item	Permitted/ Legal	Problem	Notes
Major Roads	Y	Low	
Minor Roads	Y	Medium	
Oil/mineral extraction	Y	Medium	
Open Space	Y	None	
Recreational	Y	None	
Residential - High Density	Y	High	
Residential - Low Density	Y	High	

Hydrological Features

Item	Notes
River	The Southern Fork American River at the Salmon Falls
Streams	Webber Creek, Martel Creek, Sweetwater Creek

Degraded Features

Item	Notes
Burns	Need to implement prescribed burns in areas of dense chaprral
Compaction	ROWs at Cameron Park have compaction problem
Dumping	Major problem at cameron Park
Erosion	Water bars are needed along some trail routes
Evidence of Trespass	associated to trash dumping
Fences	Non-existent, need to implement
Trails	Some trails are almost closed, need to open
Encroachments	Urban, with all associated consequences (trash, trespass, etc.)

Invasive Exotics

Item	Notes
Other Plants	Yellow star thistle and Klamath weed are the most abundant weeds

Natural Communities	Acres	Notes (Location condition & Rec.)
-LOUISIANA		
Other (Other Natural Communities)	2,004.00	Approximately 1,350 acres of northern mixed chaparral, about 650 acres of woodlands and grasslands, list of plants and animals in appendix section of management plant.

Section 8 - Initial & Capital Tasks and Costs

Property Title: Pine Hill Preserve 2007 Dataset: LA001 PAR ID: PHP_PAR3 10/17/2007

Budget: PAR

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Times Years	Total Cost
ACQUISITION							
Property Search	Search ownerships/maps	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Inspection	Property inspection	L. Hours	20.00	45.00	900.00	1.0	900.00
Funding Efforts	Find funding for purchase	L. Hours	20.00	45.00	900.00	1.0	900.00
Sub-Total							3,600.00
SITE CONSTRUCTION/MAINT.							
Project Planning	Supervise/coordinate	L. Hours	20.00	45.00	900.00	1.0	900.00
Plans Drawn	Bathroom -total cost	Unit	1.00	10,000.00	10,000.00	1.0	10,000.00
Construction Cost Estimates	Visitor stations	Unit	2.00	5,000.00	10,000.00	1.0	10,000.00
Project Management	Supervise/coordinate	L. Hours	80.00	45.00	3,600.00	1.0	3,600.00
Construction Scheduling	Coordinate w/subs	L. Hours	10.00	45.00	450.00	1.0	450.00
Fence, Construction Rental	Perimeter, 6' CL	Lin. Ft.	42,240.00	2.84	119,961.60	1.0	119,961.60
Organic Debris Removal	Equipment, Hourly	Unit	40.00	75.00	3,000.00	1.0	3,000.00
Non-organic Debris Removal	Dump fee	Unit	2.00	150.00	300.00	1.0	300.00
Earthmoving	Labor	L. Hours	24.00	20.00	480.00	1.0	480.00
Concrete Pad	Parking area	Sq. Ft.	400.00	30.00	12,000.00	1.0	12,000.00
Gate, Classic	People's gate	Item	5.00	189.75	948.75	1.0	948.75
Gate, Cattle	5' X 12' gate	Item	5.00	695.00	3,475.00	1.0	3,475.00
Lock	Padlock	Item	10.00	19.00	190.00	1.0	190.00
Other	Trail construction	L. Hours	160.00	15.00	2,400.00	1.0	2,400.00
Sub-Total							167,705.35
BIOTIC SURVEYS							
Project Management	Supervise/coordinate	L. Hours	240.00	45.00	10,800.00	1.0	10,800.00
Cultural Resource	Field Svy. & Reports	L. Hours	16.00	45.00	720.00	1.0	720.00
Landscape Ecologist	Field Svy. & Reports	L. Hours	16.00	45.00	720.00	1.0	720.00
Plant Ecologist	Field Svy. & Reports	L. Hours	120.00	45.00	5,400.00	1.0	5,400.00
Wildlife Biologist	Field Svy. & Reports	L. Hours	120.00	45.00	5,400.00	1.0	5,400.00
Entomologist	Field Svy. & Reports	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Monitor Climate	Field Data Collection	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Sub-Total							25,200.00
HABITAT RESTORATION							
Site Analysis	Field Survey & Report	L. Hours	16.00	45.00	720.00	1.0	720.00
Conceptual Plan	Preliminary Plan/Rpt.	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Restoration Plan	Final Plan/Report	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Project Management	Supervise/coordinate	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Organic Debris Removal	Clear & Grub	Acre	3.00	350.00	1,050.00	1.0	1,050.00
Heavy Equip. Rental	Bulldozer	Day	3.00	465.00	1,395.00	1.0	1,395.00
Heavy Equip. Rental	Bulldozer & Operator	Day	3.00	625.00	1,875.00	1.0	1,875.00
Erosion Control	Slope Stabilization	L. Hours	40.00	15.00	600.00	1.0	600.00
Straw	25 bales/acre	Bale	30.00	6.50	195.00	1.0	195.00
Seed Collection	Native seeds	Lb.	2.00	80.00	160.00	1.0	160.00

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Times Years	Total Cost
Plant Procurement	Trees, shrubs	Dee Pot	30.00	1.00	30.00	1.0	30.00
Plant Procurement	Shrubs	1 Gal.	40.00	3.00	120.00	1.0	120.00
Revegetation	Flag Plant Locations	L. Hours	32.00	45.00	1,440.00	1.0	1,440.00
Revegetation	Plant Installation	L. Hours	32.00	15.00	480.00	1.0	480.00
Plant Maintenance	Maintenance	L. Hours	40.00	15.00	600.00	12.0	7,200.00
Plant Protection Device	Collar & Screen	Item	100.00	2.50	250.00	1.0	250.00
Plant Protection Device	Chicken Wire Cage	Item	60.00	15.00	900.00	1.0	900.00
Exotic Plant Control	Hand Removal, Labor	L. Hours	80.00	15.00	1,200.00	1.0	1,200.00
Exotic Plant Control	Herbicide 41% con.	Gal.	5.00	108.60	543.00	1.0	543.00
Exotic Plant Control	Mow	L. Hours	32.00	15.00	480.00	1.0	480.00
Burning Permit	Permit, Base Fee	Item	3.00	50.00	150.00	1.0	150.00
Controlled Burning	Burn	Acre	30.00	1,410.00	42,300.00	1.0	42,300.00
Sub-Total							65,048.00
HABITAT MAINTENANCE							
Erosion Control	Trail maintenance	L. Hours	80.00	45.00	3,600.00	1.0	3,600.00
Straw	25 bales/acre	Bale	50.00	6.50	325.00	1.0	325.00
Seed Collection	Native seeds	Lb.	2.00	80.00	160.00	1.0	160.00
Plant Procurement	Trees, shrubs	Tree Pot	100.00	1.00	100.00	1.0	100.00
Plant Procurement	Shrubs	1 Gal.	100.00	3.00	300.00	1.0	300.00
Revegetation	Flag Plant Locations	L. Hours	120.00	45.00	5,400.00	1.0	5,400.00
Revegetation	Plant Installation	L. Hours	120.00	45.00	5,400.00	1.0	5,400.00
Plant Maintenance	Maintenance	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Supplemental Planting	Plant Replacement	L. Hours	40.00	15.00	600.00	1.0	600.00
Plant Protection Device	Wood stake 8'	Item	100.00	5.00	500.00	1.0	500.00
Exotic Plant Control	Hand Removal, Labor	L. Hours	80.00	15.00	1,200.00	1.0	1,200.00
Exotic Plant Control	Herbicide 41% con.	Gal.	5.00	108.60	543.00	1.0	543.00
Exotic Plant Control	Mow	L. Hours	32.00	15.00	480.00	1.0	480.00
Exotic Plant Control	Disk	L. Hours	24.00	15.00	360.00	1.0	360.00
Controlled Burning	Handcrew	Acre	30.00	45.00	1,350.00	1.0	1,350.00
Controlled Burning	Mechanical	Acre	30.00	150.00	4,500.00	1.0	4,500.00
Controlled Burning	Supervision	L. Hours	60.00	45.00	2,700.00	1.0	2,700.00
Brush Management	Maintenance	L. Hours	120.00	45.00	5,400.00	1.0	5,400.00
Fire Breaks	Maintenance	L. Hours	240.00	15.00	3,600.00	1.0	3,600.00
Fire Breaks	Disk	Acre	5.00	60.00	300.00	1.0	300.00
Brush Hog Tractor Mower	Rent Tractor/Mower	Day	10.00	275.00	2,750.00	1.0	2,750.00
Sub-Total							41,368.00
PUBLIC SERVICES							
Access Control	Enforcement	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Patrolling	Patrol	L. Hours	120.00	15.00	1,800.00	1.0	1,800.00
Sign, Aluminum	Aluminum 12" X 12"	Item	300.00	15.00	4,500.00	1.0	4,500.00
Sub-Total							8,100.00

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Times Years	Total Cost
GENERAL MAINTENANCE							
Project Management	Supervise/coordinate	L. Hours	160.00	45.00	7,200.00	1.0	7,200.00
Dumpster, Rental	10 C.Y.	Week	3.00	237.00	711.00	1.0	711.00
Trash Container, Rubbermaid	18" X 24" toter	Item	2.00	250.00	500.00	1.0	500.00
Trash Container	Plastic 30 Gal.	Item	5.00	13.00	65.00	1.0	65.00
Trash Liners	Liners	Item	100.00	5.50	550.00	1.0	550.00
Toilets, Portable	Monthly Rent	Months	1.00	70.00	70.00	1.0	70.00
Sub-Total							9,096.00
REPORTING							
Database Management	Data Input	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
GIS/CAD Management	Data Management	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Photodocumentation	Field Survey	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Monthly Reports	Events during month	L. Hours	8.00	45.00	360.00	1.0	360.00
Annual Reports	Summary	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Annual Work Plan	Plan and PAR Budget	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Maintenance Report	Monthly Report	L. Hours	16.00	45.00	720.00	12.0	8,640.00
Agency Report	Annual Report	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Management Plan	Initial Report	L. Hours	80.00	45.00	3,600.00	1.0	3,600.00
Fire Management Plan	Report	L. Hours	40.00	45.00	1,800.00	1.0	1,800.00
Monitoring Reports	Monitoring Documentation	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Sub-Total							24,840.00
OFFICE MAINTENANCE							
Administrative	Operations	L. Hours	160.00	45.00	7,200.00	1.0	7,200.00
Telephone Charges, Annual	Phone Charges	Person	1.00	1,200.00	1,200.00	1.0	1,200.00
Office Supplies, Year	Stationary/other-office	Person	1.00	250.00	250.00	1.0	250.00
Office Supplies, Year	Stationary/other-field	Person	1.00	200.00	200.00	1.0	200.00
Furniture	File cabinet	Item	1.00	400.00	400.00	1.0	400.00
Telephone	Touch-tone	Item	1.00	95.00	95.00	1.0	95.00
Answering Machine	Answering Machine	Item	1.00	100.00	100.00	1.0	100.00
E-Mail	Services	Year	1.00	360.00	360.00	1.0	360.00
Cellular Pager	Unit	Unit	1.00	120.00	120.00	1.0	120.00
Computer, PC Color	Laptop, Pentium	Item	1.00	2,250.00	2,250.00	1.0	2,250.00
GIS ARC/INFO	GIS, PC based	Item	1.00	15,000.00	15,000.00	1.0	15,000.00
Sub-Total							27,175.00
FIELD EQUIPMENT							
GPS, Rover & Base Unit	GPS/Corrected	Item	2.00	3,000.00	6,000.00	1.0	6,000.00
Vehicle	Small pickup	Item	1.00	24,000.00	24,000.00	1.0	24,000.00
Vehicle	Fuel	Gallons	1,000.00	3.20	3,200.00	1.0	3,200.00
Vehicle	Mileage	Mile	10,000.00	0.50	5,000.00	1.0	5,000.00
Vehicle	Maintenance	Year	1.00	300.00	300.00	1.0	300.00
Vehicle	Equipment	Year	1.00	200.00	200.00	1.0	200.00
Vehicle Insurance	Insurance	Year	1.00	1,100.00	1,100.00	1.0	1,100.00
Camera 35mm/lens	Mid-range camera	Item	1.00	1,500.00	1,500.00	1.0	1,500.00
Binoculars	Binoculars 10 X 50	Pair	1.00	300.00	300.00	1.0	300.00
Compass	Compass, High-end	Item	1.00	50.00	50.00	1.0	50.00

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Times Years	Total Cost
Spotting Scope 40X	Scope, High-end	Item	1.00	300.00	300.00	1.0	300.00
Tripod	Tripod	Item	1.00	130.00	130.00	1.0	130.00
Cellular Phone	Phone,Monthly charge	Item	1.00	30.00	30.00	1.0	30.00
Plant Press	Plant press	Item	2.00	50.00	100.00	1.0	100.00
Chemical Sprayer	5 Gallon, Classic	Item	2.00	107.00	214.00	1.0	214.00
Power Tools	Misc. Tools	Item	3.00	500.00	1,500.00	1.0	1,500.00
Uniforms	Specification Unif. Allowance	Year	1.00	400.00	400.00	1.0	400.00
Sub-Total							44,324.00
OPERATIONS							
Audit	CPA Audit	Acre	4,000.00	0.25	1,000.00	1.0	1,000.00
Contracts	Produce contracts	L. Hours	40.00	60.00	2,400.00	1.0	2,400.00
Documents/Closing Costs	Record documents	L. Hours	24.00	30.00	720.00	1.0	720.00
Endowment	Process endowment	L. Hours	24.00	30.00	720.00	1.0	720.00
Budgeting	Budget & reconcile	L. Hours	32.00	30.00	960.00	1.0	960.00
Supervisor Site Visit	Site visits	L. Hours	24.00	45.00	1,080.00	1.0	1,080.00
Project Accounting	Setup and maintain	L. Hours	16.00	30.00	480.00	1.0	480.00
Travel	Mileage	Miles	1,500.00	0.27	405.00	1.0	405.00
Travel	Lodging	Day	5.00	100.00	500.00	1.0	500.00
Travel	Meals	Day	5.00	50.00	250.00	1.0	250.00
Travel	Other	Trip	2.00	60.00	120.00	1.0	120.00
Employee Training	Classes	Day	10.00	100.00	1,000.00	1.0	1,000.00
Conferences	Conferences	Day	5.00	100.00	500.00	1.0	500.00
Employee Reports	Monthly Report	L. Hours	24.00	2.00	48.00	1.0	48.00
Sub-Total							10,183.00
CONTINGENCY & ADMINISTRATION							
Contingency							42,663.94
Administration							103,246.72
Sub-Total							145,910.66
Total							572,550.01

Section 9 - Ongoing Tasks and Costs

Property Title: Pine Hill Preserve 2007 Dataset: LA001 PAR ID: PHP_PAR3 10/17/2007

Budget: PAR

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Divide Years	Total Cost
ACQUISITION							
Property Search	Search ownerships/maps	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Inspection	Property inspection	L. Hours	20.00	45.00	900.00	1	900.00
Funding Efforts	Find funding for purchase	L. Hours	20.00	45.00	900.00	1	900.00
Sub-Total							3,600.00
SITE CONSTRUCTION/MAINT.							
Project Planning	Supervise/coordinate	L. Hours	20.00	45.00	900.00	1	900.00
Plans Drawn	Bathroom -total cost	Unit	1.00	10,000.00	10,000.00	30	333.33
Construction Cost Estimates	Visitor stations	Unit	2.00	5,000.00	10,000.00	15	666.67
Project Management	Supervise/coordinate	L. Hours	80.00	45.00	3,600.00	1	3,600.00
Construction Scheduling	Coordinate w/subs	L. Hours	10.00	45.00	450.00	1	450.00
Fence, Construction Rental	Perimeter, 6' CL	Lin. Ft.	42,240.00	2.84	119,961.60	15	7,997.44
Organic Debris Removal	Equipment, Hourly	Unit	40.00	75.00	3,000.00	1	3,000.00
Non-organic Debris Removal	Dump fee	Unit	2.00	150.00	300.00	1	300.00
Earthmoving	Labor	L. Hours	24.00	20.00	480.00	1	480.00
Concrete Pad	Parking area	Sq. Ft.	400.00	30.00	12,000.00	30	400.00
Gate, Classic	People's gate	Item	5.00	189.75	948.75	30	31.63
Gate, Cattle	5' X 12' gate	Item	5.00	695.00	3,475.00	30	115.83
Lock	Padlock	Item	10.00	19.00	190.00	15	12.67
Other	Trail construction	L. Hours	160.00	15.00	2,400.00	5	480.00
Sub-Total							18,767.57
BIOTIC SURVEYS							
Project Management	Supervise/coordinate	L. Hours	240.00	45.00	10,800.00	1	10,800.00
Cultural Resource	Field Svy. & Reports	L. Hours	16.00	45.00	720.00	1	720.00
Landscape Ecologist	Field Svy. & Reports	L. Hours	16.00	45.00	720.00	1	720.00
Plant Ecologist	Field Svy. & Reports	L. Hours	120.00	45.00	5,400.00	1	5,400.00
Wildlife Biologist	Field Svy. & Reports	L. Hours	120.00	45.00	5,400.00	1	5,400.00
Entomologist	Field Svy. & Reports	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Monitor Climate	Field Data Collection	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Sub-Total							25,200.00
HABITAT RESTORATION							
Site Analysis	Field Survey & Report	L. Hours	16.00	45.00	720.00	1	720.00
Conceptual Plan	Preliminary Plan/Rpt.	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Restoration Plan	Final Plan/Report	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Project Management	Supervise/coordinate	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Organic Debris Removal	Clear & Grub	Acre	3.00	350.00	1,050.00	1	1,050.00
Heavy Equip. Rental	Bulldozer	Day	3.00	465.00	1,395.00	15	93.00
Heavy Equip. Rental	Bulldozer & Operator	Day	3.00	625.00	1,875.00	15	125.00
Erosion Control	Slope Stabilization	L. Hours	40.00	15.00	600.00	5	120.00
Straw	25 bales/acre	Bale	30.00	6.50	195.00	5	39.00
Seed Collection	Native seeds	Lb.	2.00	80.00	160.00	5	32.00

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Divide Years	Total Cost
Plant Procurement	Trees, shrubs	Dee Pot	30.00	1.00	30.00	5	6.00
Plant Procurement	Shrubs	1 Gal.	40.00	3.00	120.00	5	24.00
Revegetation	Flag Plant Locations	L. Hours	32.00	45.00	1,440.00	1	1,440.00
Revegetation	Plant Installation	L. Hours	32.00	15.00	480.00	1	480.00
Plant Maintenance	Maintenance	L. Hours	40.00	15.00	600.00	1	600.00
Supplemental Planting	Plant Replacement	L. Hours	40.00	15.00	600.00	1	600.00
Plant Protection Device	Collar & Screen	Item	100.00	2.50	250.00	2	125.00
Plant Protection Device	Chicken Wire Cage	Item	60.00	15.00	900.00	2	450.00
Exotic Plant Control	Hand Removal, Labor	L. Hours	80.00	15.00	1,200.00	1	1,200.00
Exotic Plant Control	Herbicide 41% con.	Gal.	5.00	108.60	543.00	1	543.00
Exotic Plant Control	Mow	L. Hours	32.00	15.00	480.00	1	480.00
Burning Permit	Permit, Base Fee	Item	3.00	50.00	150.00	1	150.00
Controlled Burning	Burn	Acre	30.00	1,410.00	42,300.00	10	4,230.00
Sub-Total							16,467.00
HABITAT MAINTENANCE							
Erosion Control	Trail maintenance	L. Hours	80.00	45.00	3,600.00	1	3,600.00
Straw	25 bales/acre	Bale	50.00	6.50	325.00	1	325.00
Seed Collection	Native seeds	Lb.	2.00	80.00	160.00	1	160.00
Plant Procurement	Trees, shrubs	Tree Pot	100.00	1.00	100.00	1	100.00
Plant Procurement	Shrubs	1 Gal.	100.00	3.00	300.00	1	300.00
Revegetation	Flag Plant Locations	L. Hours	120.00	45.00	5,400.00	1	5,400.00
Revegetation	Plant Installation	L. Hours	120.00	45.00	5,400.00	1	5,400.00
Plant Maintenance	Maintenance	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Supplemental Planting	Plant Replacement	L. Hours	40.00	15.00	600.00	1	600.00
Plant Protection Device	Wood stake 8'	Item	100.00	5.00	500.00	1	500.00
Exotic Plant Control	Hand Removal, Labor	L. Hours	80.00	15.00	1,200.00	1	1,200.00
Exotic Plant Control	Herbicide 41% con.	Gal.	5.00	108.60	543.00	1	543.00
Exotic Plant Control	Mow	L. Hours	32.00	15.00	480.00	1	480.00
Exotic Plant Control	Disk	L. Hours	24.00	15.00	360.00	1	360.00
Controlled Burning	Handcrew	Acre	30.00	45.00	1,350.00	1	1,350.00
Controlled Burning	Mechanical	Acre	30.00	150.00	4,500.00	1	4,500.00
Controlled Burning	Supervision	L. Hours	60.00	45.00	2,700.00	1	2,700.00
Brush Management	Maintenance	L. Hours	120.00	45.00	5,400.00	1	5,400.00
Fire Breaks	Maintenance	L. Hours	240.00	15.00	3,600.00	1	3,600.00
Fire Breaks	Disk	Acre	5.00	60.00	300.00	1	300.00
Brush Hog Tractor Mower	Rent Tractor/Mower	Day	10.00	275.00	2,750.00	1	2,750.00
Sub-Total							41,368.00
PUBLIC SERVICES							
Access Control	Enforcement	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Patrolling	Patrol	L. Hours	120.00	15.00	1,800.00	1	1,800.00
Sign, Aluminum	Aluminum 12" X 12"	Item	300.00	15.00	4,500.00	7	642.86
Sub-Total							4,242.86

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Divide Years	Total Cost
GENERAL MAINTENANCE							
Project Management	Supervise/coordinate	L. Hours	160.00	45.00	7,200.00	1	7,200.00
Dumpster, Rental	10 C.Y.	Week	3.00	237.00	711.00	1	711.00
Trash Container, Rubbermaid	18" X 24" toter	Item	2.00	250.00	500.00	10	50.00
Trash Container	Plastic 30 Gal.	Item	5.00	13.00	65.00	5	13.00
Trash Liners	Liners	Item	100.00	5.50	550.00	1	550.00
Toilets, Portable	Monthly Rent	Months	1.00	70.00	70.00	1	70.00
Sub-Total							8,594.00
REPORTING							
Database Management	Data Input	L. Hours	40.00	45.00	1,800.00	1	1,800.00
GIS/CAD Management	Data Management	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Photodocumentation	Field Survey	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Monthly Reports	Events during month	L. Hours	8.00	45.00	360.00	1	360.00
Annual Reports	Summary	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Annual Work Plan	Plan and PAR Budget	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Maintenance Report	Monthly Report	L. Hours	16.00	45.00	720.00	12	60.00
Agency Report	Annual Report	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Management Plan	Initial Report	L. Hours	80.00	45.00	3,600.00	5	720.00
Fire Management Plan	Report	L. Hours	40.00	45.00	1,800.00	1	1,800.00
Monitoring Reports	Monitoring Documentation	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Sub-Total							13,380.00
OFFICE MAINTENANCE							
Administrative	Operations	L. Hours	160.00	45.00	7,200.00	1	7,200.00
Telephone Charges, Annual	Phone Charges	Person	1.00	1,200.00	1,200.00	1	1,200.00
Office Supplies, Year	Stationary/other-office	Person	1.00	250.00	250.00	1	250.00
Office Supplies, Year	Stationary/other-field	Person	1.00	200.00	200.00	1	200.00
Furniture	File cabinet	Item	1.00	400.00	400.00	10	40.00
Telephone	Touch-tone	Item	1.00	95.00	95.00	5	19.00
Answering Machine	Answering Machine	Item	1.00	100.00	100.00	5	20.00
E-Mail	Services	Year	1.00	360.00	360.00	1	360.00
Cellular Pager	Unit	Unit	1.00	120.00	120.00	5	24.00
Computer, PC Color	Laptop, Pentium	Item	1.00	2,250.00	2,250.00	4	562.50
GIS ARC/INFO	GIS, PC based	Item	1.00	15,000.00	15,000.00	5	3,000.00
Sub-Total							12,875.50
FIELD EQUIPMENT							
GPS, Rover & Base Unit	GPS/Corrected	Item	2.00	3,000.00	6,000.00	5	1,200.00
Vehicle	Small pickup	Item	1.00	24,000.00	24,000.00	8	3,000.00
Vehicle	Fuel	Gallons	1,000.00	3.20	3,200.00	1	3,200.00
Vehicle	Mileage	Mile	10,000.00	0.50	5,000.00	1	5,000.00
Vehicle	Maintenance	Year	1.00	300.00	300.00	1	300.00
Vehicle	Equipment	Year	1.00	200.00	200.00	1	200.00
Vehicle Insurance	Insurance	Year	1.00	1,100.00	1,100.00	1	1,100.00
Camera 35mm/lens	Mid-range camera	Item	1.00	1,500.00	1,500.00	5	300.00
Binoculars	Binoculars 10 X 50	Pair	1.00	300.00	300.00	5	60.00
Compass	Compass, High-end	Item	1.00	50.00	50.00	5	10.00

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Divide Years	Total Cost
Spotting Scope 40X	Scope, High-end	Item	1.00	300.00	300.00	10	30.00
Tripod	Tripod	Item	1.00	130.00	130.00	8	16.25
Cellular Phone	Phone,Monthly charge	Item	1.00	30.00	30.00	5	6.00
Plant Press	Plant press	Item	2.00	50.00	100.00	8	12.50
Chemical Sprayer	5 Gallon, Classic	Item	2.00	107.00	214.00	5	42.80
Power Tools	Misc. Tools	Item	3.00	500.00	1,500.00	5	300.00
Uniforms	Specification Unif. Allowance	Year	1.00	400.00	400.00	1	400.00
Sub-Total							15,177.55
OPERATIONS							
Audit	CPA Audit	Acre	4,000.00	0.25	1,000.00	1	1,000.00
Contracts	Produce contracts	L. Hours	40.00	60.00	2,400.00	1	2,400.00
Documents/Closing Costs	Record documents	L. Hours	24.00	30.00	720.00	1	720.00
Endowment	Process endowment	L. Hours	24.00	30.00	720.00	1	720.00
Budgeting	Budget & reconcile	L. Hours	32.00	30.00	960.00	1	960.00
Supervisor Site Visit	Site visits	L. Hours	24.00	45.00	1,080.00	1	1,080.00
Project Accounting	Setup and maintain	L. Hours	16.00	30.00	480.00	1	480.00
Travel	Mileage	Miles	1,500.00	0.27	405.00	1	405.00
Travel	Lodging	Day	5.00	100.00	500.00	1	500.00
Travel	Meals	Day	5.00	50.00	250.00	1	250.00
Travel	Other	Trip	2.00	60.00	120.00	1	120.00
Employee Training	Classes	Day	10.00	100.00	1,000.00	1	1,000.00
Conferences	Conferences	Day	5.00	100.00	500.00	1	500.00
Employee Reports	Monthly Report	L. Hours	24.00	2.00	48.00	1	48.00
Sub-Total							10,183.00
CONTINGENCY & ADMINISTRATION							
Contingency							16,985.55
Administration							41,105.03
Sub-Total							58,090.58
Total							227,946.06

Section 10 - Financial Summary

Property Title: Pine Hill Preserve 2007 Dataset: LA001 PAR ID: PHP_PAR3 10/17/2007

PAR(4042 ac.)

	Rate %	Total $
INITIAL FINANCIAL REQUIREMENTS		
I & C Revenue		0
I & C Management Costs		426,639
I & C Contingency Expense	10.00	42,664
Total I & C Management Costs		469,303
I & C Administrative Costs of Total I & C Management Costs	22.00	103,247
Total I & C Costs		572,550
Net I & C Management and Administrative Costs		572,550
ANNUAL ONGOING FINANCIAL REQUIREMENTS		
Ongoing Costs		169,855
Ongoing Contingency Expense	10.00	16,986
Total Ongoing Management Costs		186,841
Ongoing Administrative Costs of Total Ongoing Management costs	22.00	41,105
Total Ongoing Costs		227,947
ENDOWMENT REQUIREMENTS FOR ONGOING STEWARDSHIP		
Endowment to Provide Income of $ 227,947		5,698,675
Endowment per Acre is $ 1,410.		
Ongoing Management Costs Based on 4.00% of Endowment per Year.		
Ongoing Management Funding is $ 227,947 per Year Resulting in $56 per Acre per Year.		
TOTAL CONTRIBUTION		6,271,225